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The Patent System and its Role in the Promotion of Innovation

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Head, Innovation and Technology Support Section

Abuja
April 5, 2016

Overview

- Context
- Patent System
  - Patent information
- Technology and Innovation Support Centers (TISCs)
- WIPO Support
  - Capacity Building
  - Networking
  - Resources

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Context

- WIPO Development Agenda

  "…despite the important scientific and technological advances and promises of the 20th and early 21st centuries, in many areas a significant 'knowledge gap' as well as a 'digital divide' continue to separate the wealthy nations from the poor."

Context: Knowledge gap

- National library collection size : Books

Africa	3 Million
Asia	46 Million
Europe	300 Million

Source: UNESCO

Context: Knowledge gap

- Study conducted by WHO in 2003:
  - Countries with a GNP less than US$1,000 : 56% of medical institutions had no subscriptions over the previous 5 years.
  - Countries with GNP between US$1,000 - US$3,000 : 34% of medical institutions had an average of two subscriptions per year.

Context: Knowledge gap

- Resident patent filings per million population (2006)

Bangladesh	0.15
Madagascar	0.21
Peru	1.37
Philippines	2.71
Morocco	5.84
United States	741.78

→ unexploited innovative potential

Patent system

- **Protection**: Reward investments made in developing a new invention
- **Disclosure**: Publish and make known technical information of a new invention

→ Innovation and economic growth

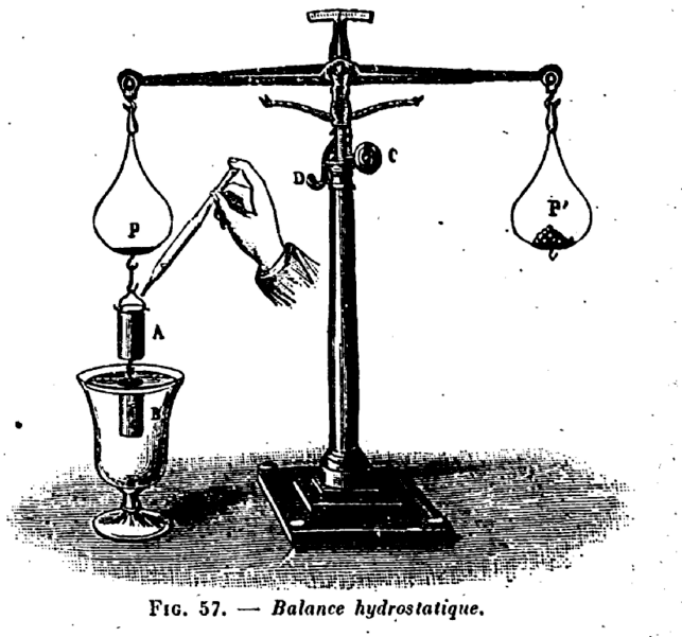


Fig. 57. — *Balance hydrostatique.*

Image source: E. Vitte

Nature of patent information

Protection

- Territorial
- Time-limited
- Claims only

→ Exclusive right

Disclosure

- Global
- Permanent
- Full document

→ Learning opportunity

Patent documents

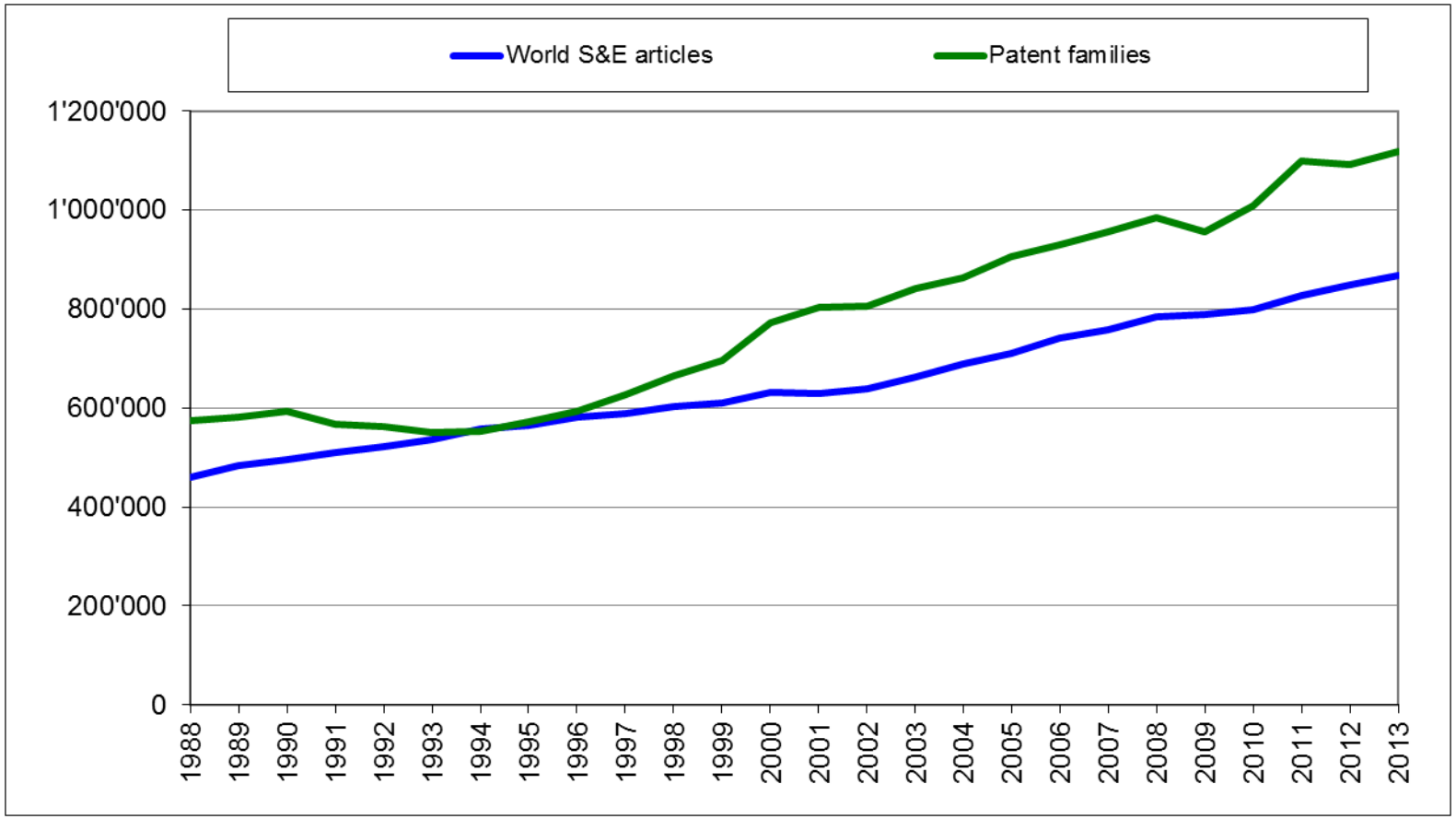
- 90+ million patent documents published to date
- 2+ million new patent applications published yearly

- Technical information never published elsewhere

→ A unique source of information

Source: Bregonje, 2005; WIPO, 2012

New technical information worldwide



Source: WIPO Statistics Database and US National Science Foundation, July 2015 (data for 2012 and 2013 extrapolated)

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Patent information: New opportunities!

- Many patent collections are now available online in digital format
- Search services and tools have made the exploitation of this information simpler and more cost-effective
- Many search services and tools are available for free!

  → Opportunities exist to open patent information to new constituencies

Uses of patent information

- Legal
- Technical
- Business
- Policy

Uses of patent information: Legal

- Determine the patentability of your inventions
- Draft strong patent applications
- Determine the validity of existing patents and which technologies belong to the public domain
- Avoid patent infringement

Scenario

- A manufacturer of wind turbines would like to identify new technologies to incorporate into its products.
- The manufacturer would also like to know whether these technologies can be exploited freely, or whether licenses must be obtained from patent holders.

→ Avoid patent infringement

Photo source: Pavel Ševela / Wikimedia Commons

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Record

1. (WO2001069081) BEARING FOR AN ADJUSTABLE ROTOR BLADE ON A WIND ENERGY PLANT

PCT Biblio. Data | Description | Claims | National Phase | Notices | Documents

Latest bibliographic data on file with the International Bureau

Pub. No.:	WO/2001/069081	**International Application No.:**	PCT/EP2001/002008
Publication Date:	20.09.2001	**International Filing Date:**	22.02.2001
Chapter 2 Demand Filed:	18.07.2001		

IPC: ***F03D 11/00*** (2006.01), ***F16C 19/18*** (2006.01), ***F16C 19/54*** (2006.01)

Applicants: **WOBBEN, Aloys** [DE/DE]; (DE)

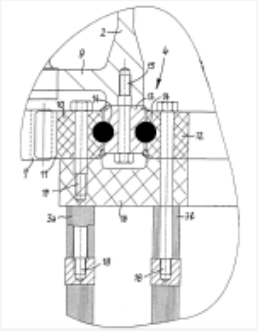
Inventors: **WOBBEN, Aloys**; (DE)

Agent: **EISENFÜHR, Günther**; Eisenführ, Speiser & Partner Martinistrasse 24 28195 Bremen (DE)

Priority Data: 100 11 464.4 10.03.2000 DE

Title
(DE) LAGERUNG EINES VERSTELLBAREN ROTORBLATTS EINER WINDENERGIEANLAGE
(EN) BEARING FOR AN ADJUSTABLE ROTOR BLADE ON A WIND ENERGY PLANT
(FR) PALIER POUR UNE PALE DE ROTOR REGLABLE D'UNE EOLIENNE

Abstract:
(DE) Die Lagerung eines verstellbaren Rotorblattes an der Rotornabe einer Windenergieanlage hat als Stellantrieb-Schwenklager ein Wälzlager für die Übertragung hoher Axialkräfte und grosser Biegemomente bei geringen Relativbewegungen zwischen den Lagerpartnern. Es besteht aus einem zwei radial zueinander versetzte Reihen von Wälzkörpern formschlüssig aufnehmenden Lagerring für den einen Lagerpartner und einem diese im Querschnitt U-förmig umgreifenden Lagerring für den anderen Lagerpartner. Der Lagerring für das den anderen Lagerpartner bildende Rotorblatt besteht aus zwei Ringen (10, 12) mit unterschiedlichen Durchmessern, die unabhängig voneinander am Rotorblatt (3) befestigt sind. Die kreisförmige Wurzel des hohlen Rotorblattes (3) ist in zwei Teilschalen (3a, 3b) gegabelt und jede Teilschale ist an einem der beiden Ringe (10, 12) des einen Lagerrings befestigt.
(EN) The invention relates to the bearing for an adjustable rotor blade on



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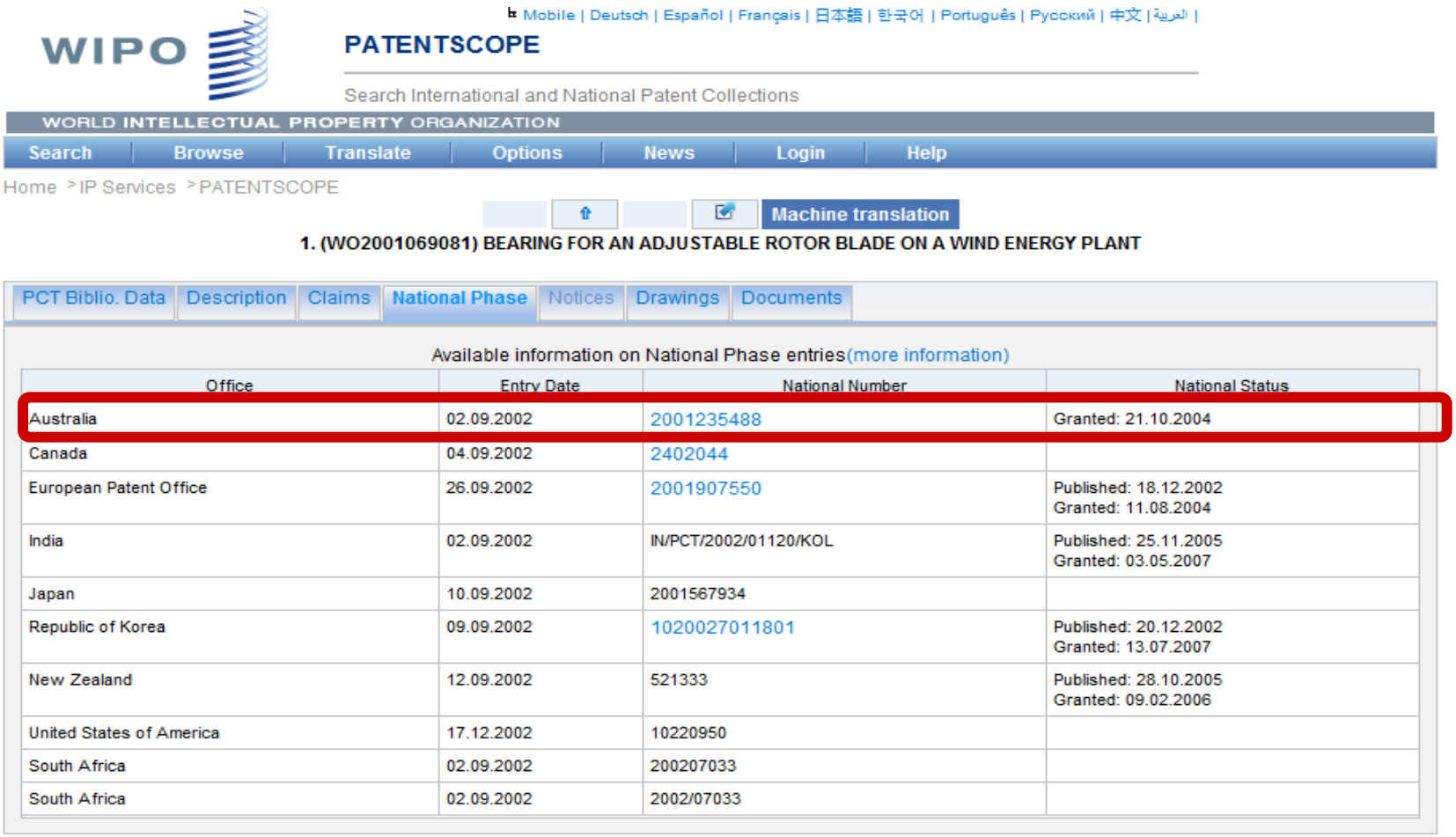
Legal status: National phase



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PATENTSCOPE

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Machine translation

1. (WO2001069081) BEARING FOR AN ADJUSTABLE ROTOR BLADE ON A WIND ENERGY PLANT

PCT Biblio. Data | Description | Claims | National Phase | Notices | Drawings | Documents

Available information on National Phase entries (more information)

Office	Entry Date	National Number	National Status
Australia	02.09.2002	2001235488	Granted: 21.10.2004
Canada	04.09.2002	2402044	
European Patent Office	26.09.2002	2001907550	Published: 18.12.2002 Granted: 11.08.2004
India	02.09.2002	IN/PCT/2002/01120/KOL	Published: 25.11.2005 Granted: 03.05.2007
Japan	10.09.2002	2001567934	
Republic of Korea	09.09.2002	1020027011801	Published: 20.12.2002 Granted: 13.07.2007
New Zealand	12.09.2002	521333	Published: 28.10.2005 Granted: 09.02.2006
United States of America	17.12.2002	10220950	
South Africa	02.09.2002	200207033	
South Africa	02.09.2002	2002/07033	

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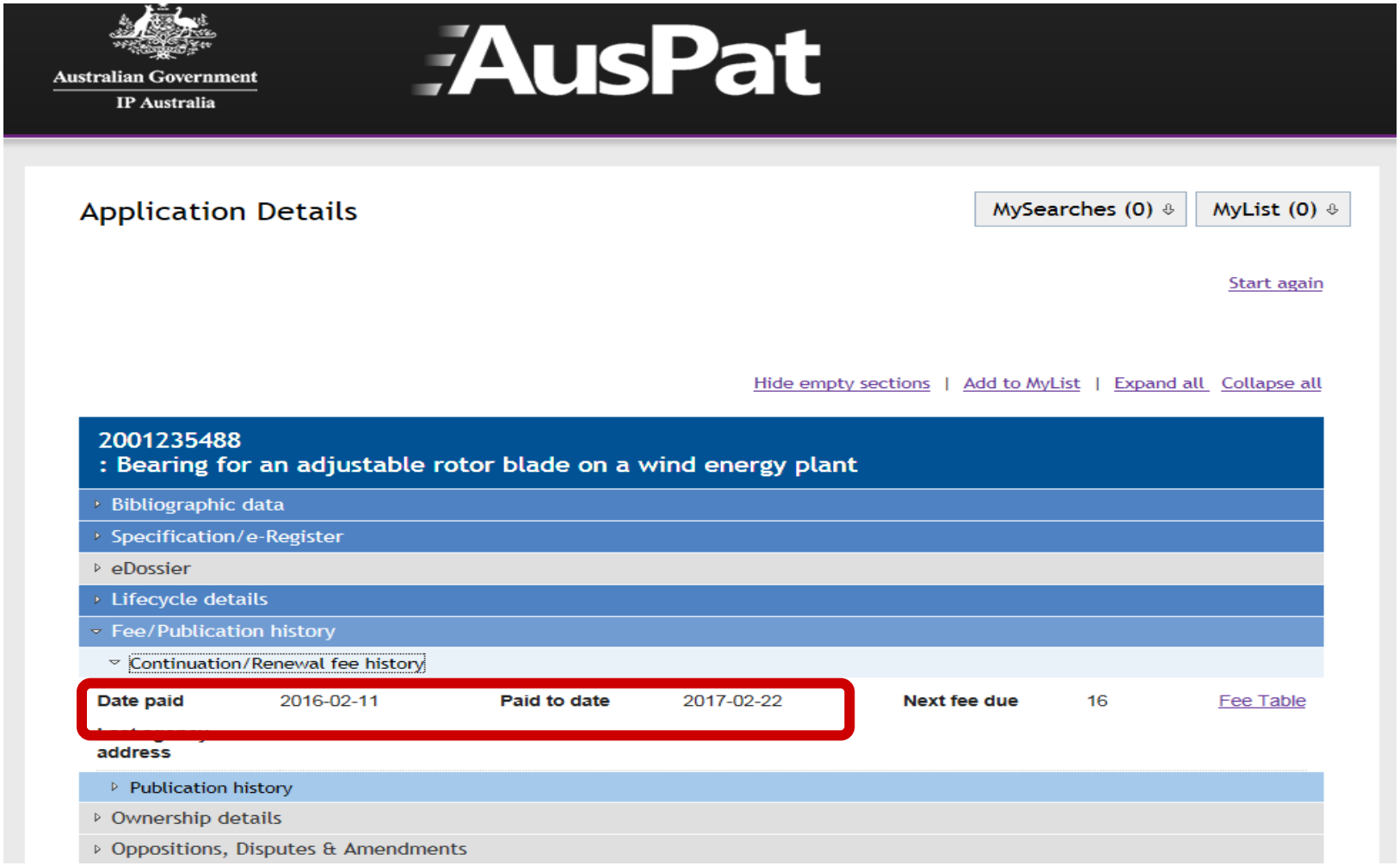
Legal status: Australia

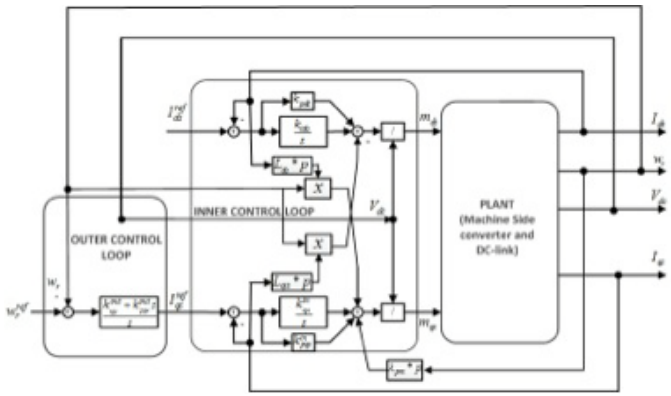


Uses of patent information: technical

- Develop new solutions to technical challenges faced in the country, or adapt existing technologies to suit local conditions
- Target research resources more effectively (avoid “reinventing the wheel”)

- Technical information must be sufficiently clear and comprehensive to be carried out by a typical expert in the field of technology (“a person having ordinary skill in the art”)

Scenario



- A research laboratory aims to develop new wind turbine controller technologies and would like to know what has already been done in this area of research.

→ Avoid reinventing the wheel

Photo and image source: Dirk Ingo Franke, johnkonstanta (Wikimedia)

Record

1. (EP2339175) System for monitoring and controlling a wind turbine farm

National Biblio. Data | Description | Claims | Drawings | Documents

Permanent Link/ Bookmark:

Application Number: 10194645 **Application Date:** 13.12.2010

Publication Number: 2339175 **Publication Date:** 29.06.2011

Publication Kind : A3

Designated States: AL,AT,BA,BE,BG,CH,CY,CZ,DE,DK,EE,ES,FI,FR,GB,GR,HR,HU,IE,IS,IT,LI,LT,LU,LV,MC,ME,MK,MT,NL,NO,PL,PT,RO,RS,SE,SI,SK,SM,TR.

IPC: F03D 11/00
F03D 7/04

Applicants: GEN ELECTRIC

Inventors: ZHU WEI
RAJ VASANT

Priority Data: 200910262639 25.12.2009 CN

Title:
(FR) Système de surveillance et de contrôle d'un parc éolien
(EN) System for monitoring and controlling a wind turbine farm
(DE) System zur Überwachung und Steuerung einer Windturbinenanlage

Abstract:
(EN) A computerized system (40) for operating at least one wind turbine (10) is disclosed. The system (40) includes a supervisory control and data acquisition (SCADA) system and a display (80) for depicting a graphical output of information from the SCADA system. The SCADA system analyzes the information and transmits a signal to the display (80) to visually depict the information in a dynamic manner.

European patent application

[0001] The present disclosure is directed generally to a system and method for monitoring and controlling the operation of a wind turbine or wind turbines, and specifically to a system or method for dynamically displaying performance-related information for a wind turbine or wind turbines.

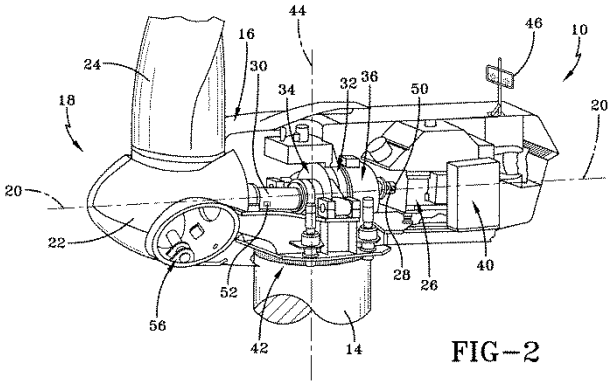
[0002] In recent years, reliance upon wind as a source of energy has grown. As reliance upon wind as a source of energy continues to grows, increased efficiency of wind turbines and wind turbine farms increases in importance.

[0003] Generally, a wind turbine converts wind energy into rotational energy, and more specifically, converts kinetic energy of wind into mechanical energy. The mechanical energy is used for producing electrical power. Wind turbines may include a rotor having multiple blades that rotate in response to force provided by the wind. Upon rotating the multiple blades, a drive shaft rotates, which in turn drives an electrical generator to generate the electrical power.

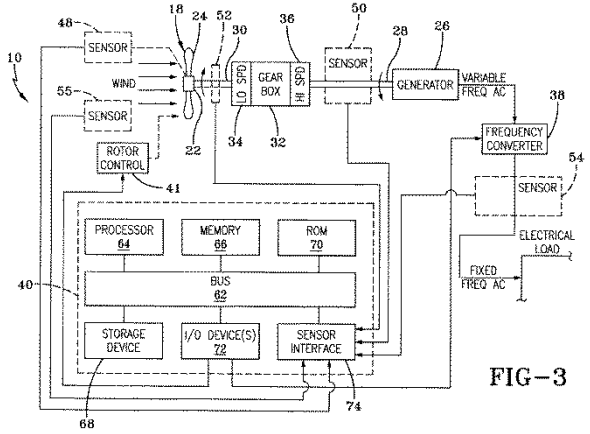
[0004] A wind farm is a group of interconnected wind turbines at a location. The location of the wind farm may consist of two wind turbines to hundreds of wind turbines. The location of the wind farm may cover a small area of hundreds of square yards (square meters) to an extended area of hundreds of square miles (square kilometers). The location of the wind farm may be located off-shore or near-shore, typically selected so as to increase the energy of the wind. The location may be selected to increase the energy generated by the wind.

[0005] Wind turbines and wind farms can be monitored by a computer system, for example, a Supervisory Control and Data Acquisition system ("SCADA" system). The SCADA system can monitor and control a plant or equipment in industries such as telecommunications, water and waste control, energy, oil and gas refining, transportation. The SCADA system can gather information, such as where a leak on a pipeline has occurred, transfer the information back to a central site, alert a home station that the leak has occurred, carry out necessary analysis and control, such as determining if the leak is critical, and display the information in a logical and organized manner. The SCADA system can be simple, such as a system that monitors environmental conditions of a small office building, or complex, such as a system that monitors all activity in a nuclear power plant or a municipal water system.

[0006] As wind turbines and wind farms become more interconnected, larger, and/or more remote, providing performance-related information to an operator about one or more wind turbines or wind farms becomes more important. If the operator receives too little information, then the operator will not be aware of performance-related issues. If the operator receives too much information, then the operator will not be capable of adequately responding to performance-related issues. If the operator receives the information too late, then a trip event will likely occur. Addressing the performance-related issue prior to a trip event can increase overall efficiency of a wind turbine or wind turbine farm. Failure to monitor and control the wind turbines or wind farms can result in decreased efficiency or failure of the wind turbine or wind farm.



FIG–2



FIG–3

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Uses of patent information: business / policy

- Track research activities of competitors
- Identify opportunity for licensing and joint ventures
- Review trends in specific areas of technology

Scenario

- The manufacturer of wind turbines would like to identify its major competitors and potential partners to develop new technologies and products.

Photo source: W.Wacker (Wikimedia)

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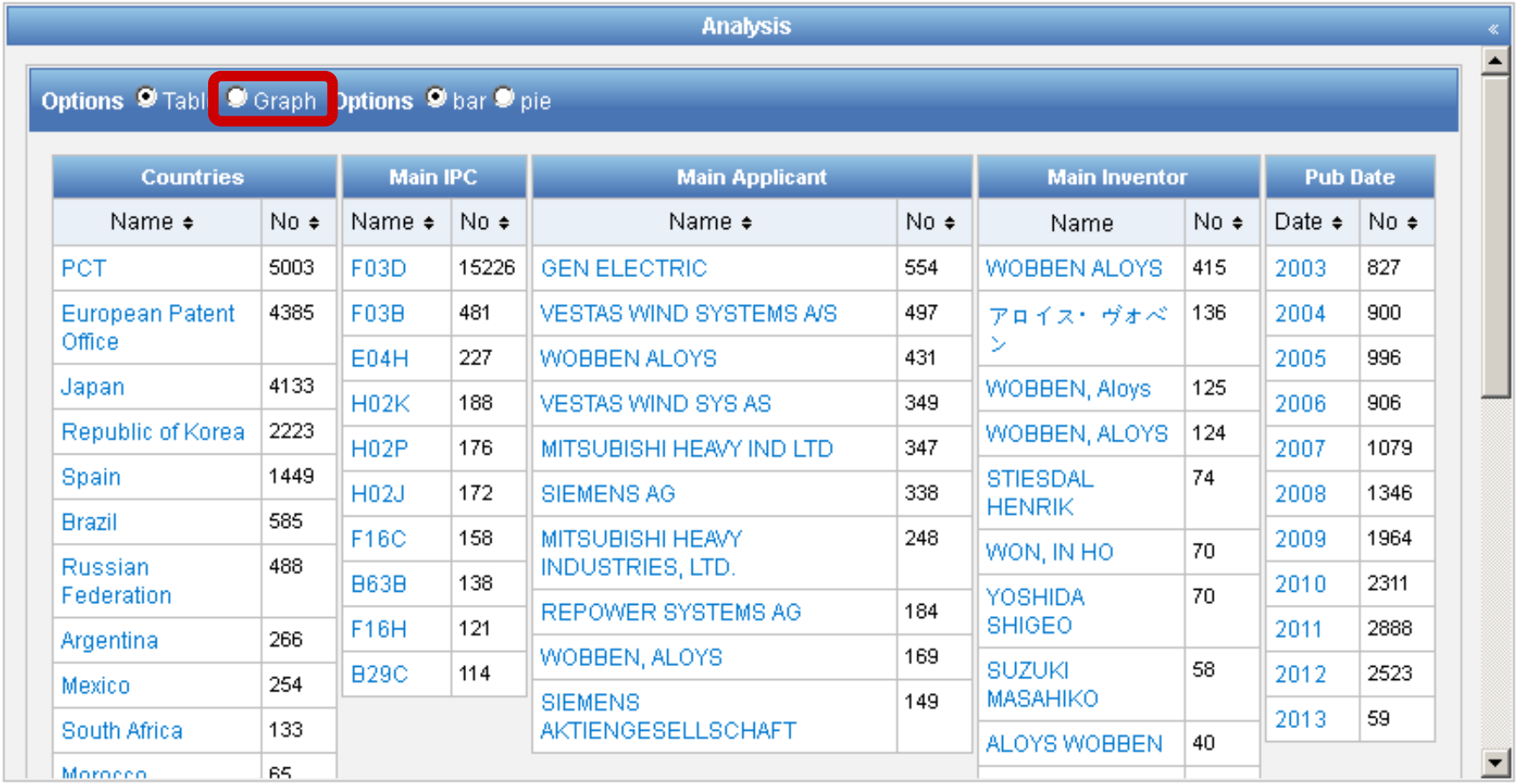
Search results



Analysis

Options Tabl Graph Options bar pie

Countries	
Name	No
PCT	5003
European Patent Office	4385
Japan	4133
Republic of Korea	2223
Spain	1449
Brazil	585
Russian Federation	488
Argentina	266
Mexico	254
South Africa	133
Morocco	65

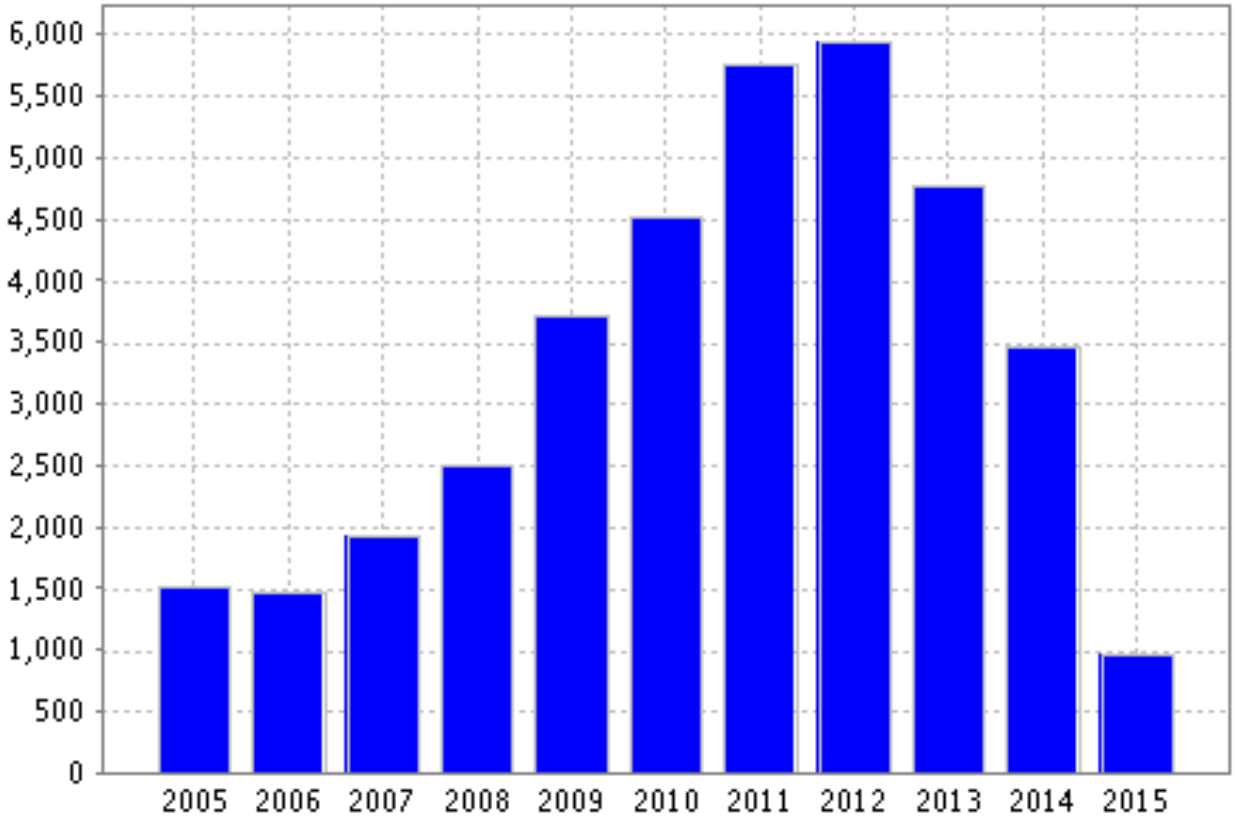
Main IPC	
Name	No
F03D	15226
F03B	481
E04H	227
H02K	188
H02P	176
H02J	172
F16C	158
B63B	138
F16H	121
B29C	114

Main Applicant	
Name	No
GEN ELECTRIC	554
VESTAS WIND SYSTEMS A/S	497
WOBBEN ALOYS	431
VESTAS WIND SYS AS	349
MITSUBISHI HEAVY IND LTD	347
SIEMENS AG	338
MITSUBISHI HEAVY INDUSTRIES, LTD.	248
REPOWER SYSTEMS AG	184
WOBBEN, ALOYS	169
SIEMENS AKTIENGESELLSCHAFT	149

Main Inventor	
Name	No
WOBBEN ALOYS	415
アロイス・ヴォベン	136
WOBBEN, Aloys	125
WOBBEN, ALOYS	124
STIESDAL HENRIK	74
WON, IN HO	70
YOSHIDA SHIGEO	70
SUZUKI MASAHIKO	58
ALOYS WOBBEN	40

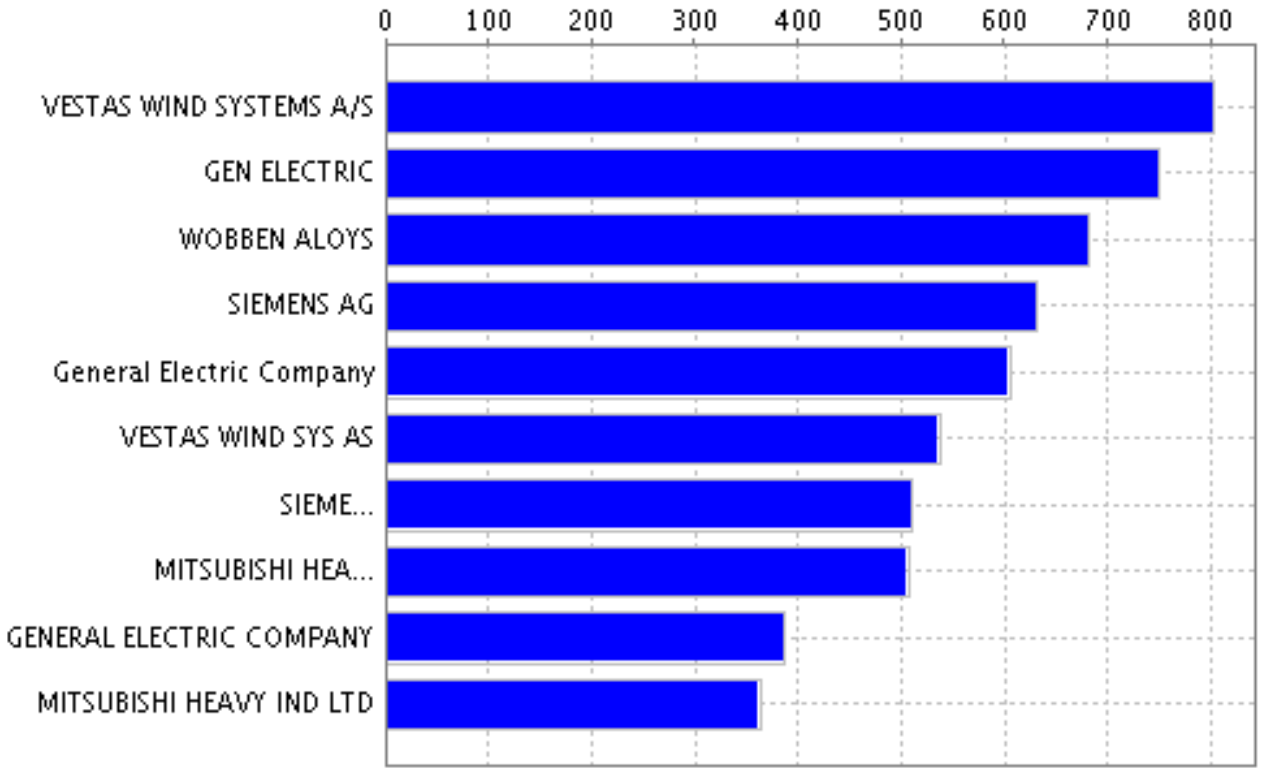
Pub Date	
Date	No
2003	827
2004	900
2005	996
2006	906
2007	1079
2008	1346
2009	1964
2010	2311
2011	2888
2012	2523
2013	59

Filing trends



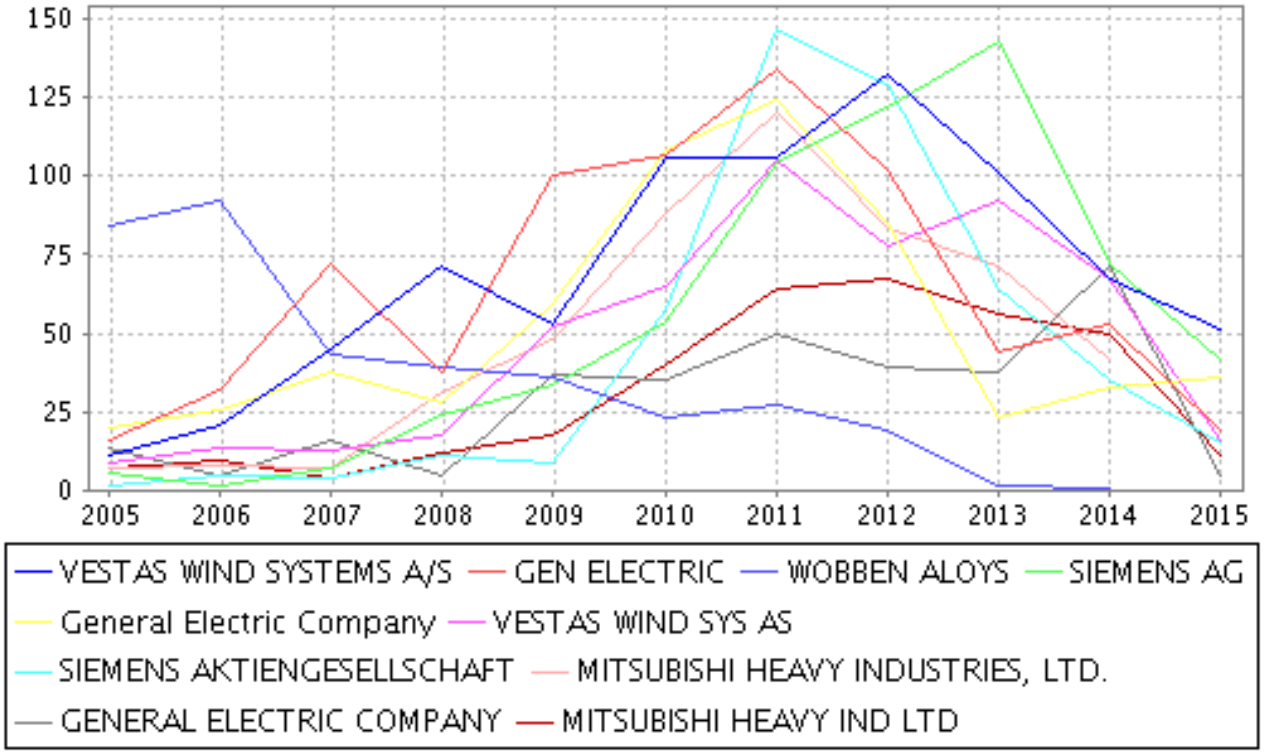
- How is this technology evolving over time?

Top applicants



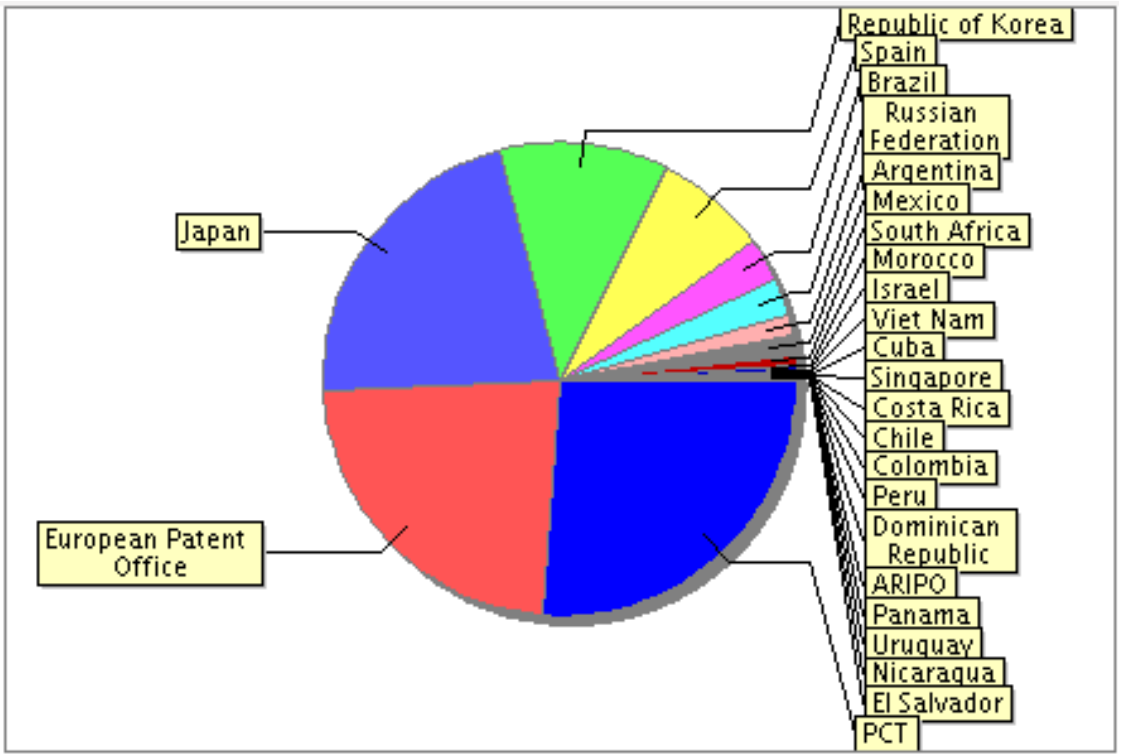
- Who is particularly active in this field of technology?
- From whom can I seek licenses, or with whom can I negotiate partnerships?

Top applicants



- How is the patenting activity of top applicants evolving over time?

Top offices of filing



- With which offices do applicants tend to file their patent applications in this field of technology?

Scenario

- A consumer electronics company would like to find out more about the research and development activities of its secretive competitor.

→ Track research activities of competitors

Patent application

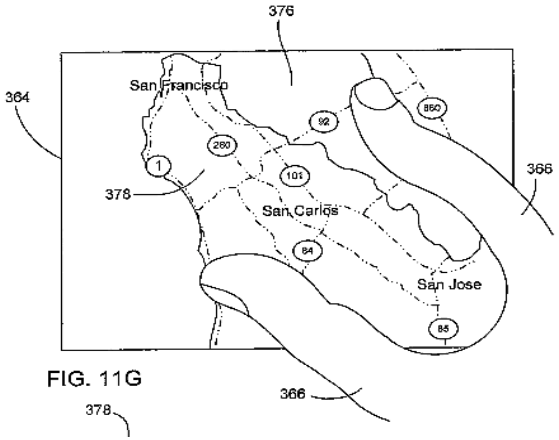


FIG. 11G

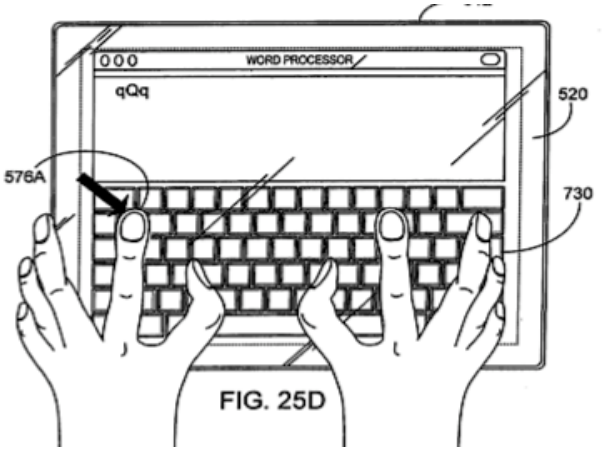


FIG. 25D

- PCT application: WO 2006/020305 (“Gestures for Touch-Sensitive Input Devices”)
- Published: February 2006

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Product

- Apple Computer's iPhone
- Released: January 2007

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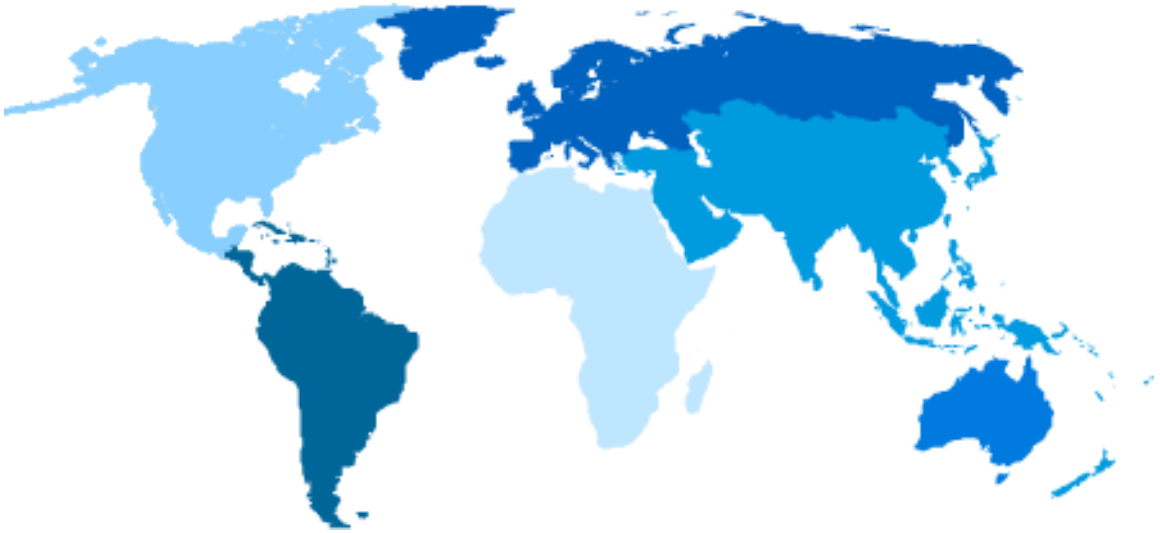
TISC Results to date



- 50 national projects launched
- Over 420 centers opened worldwide
- Over 400’000 inquiries supported annually

Data current as of February 2016

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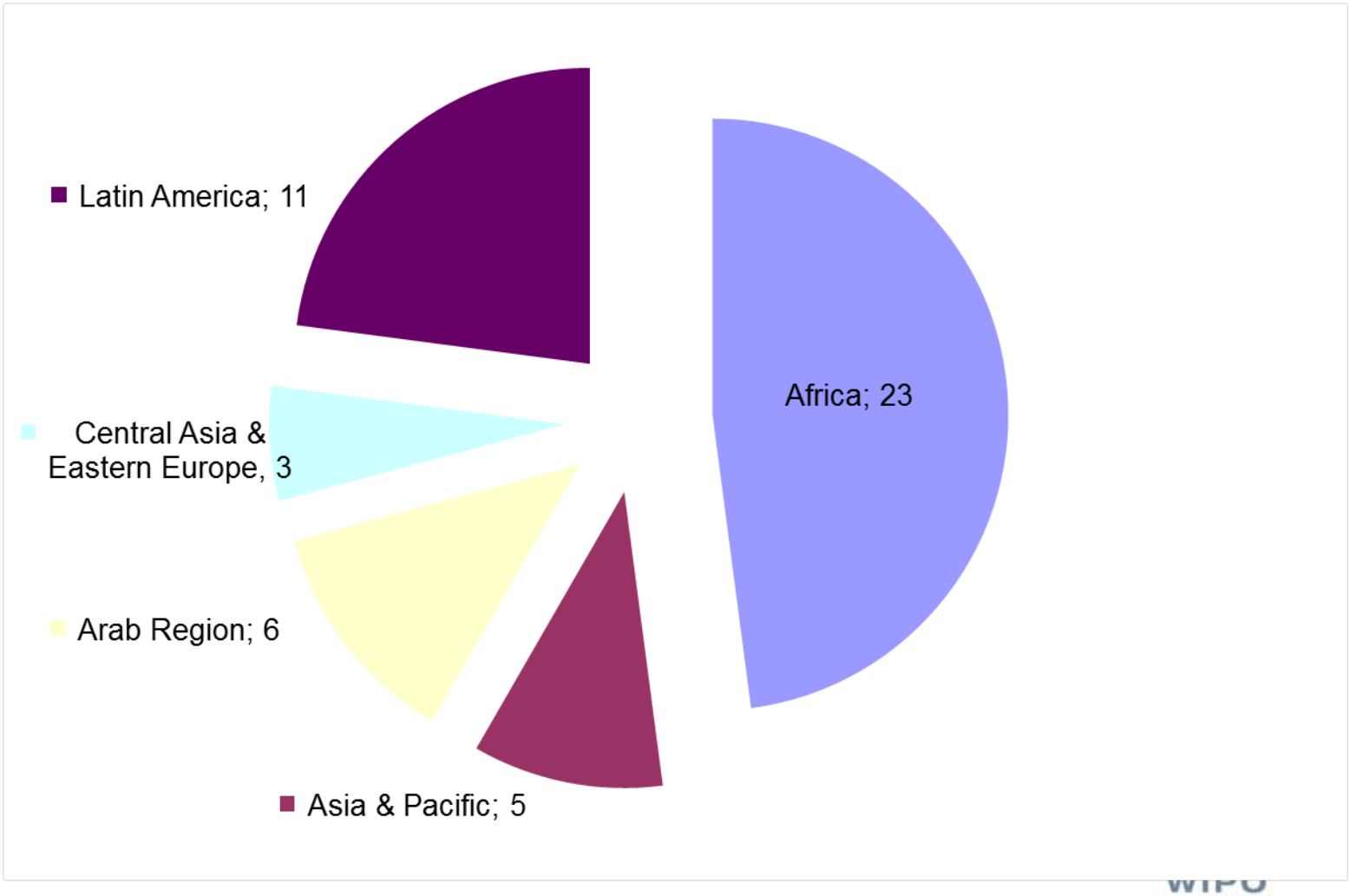
Regional distribution

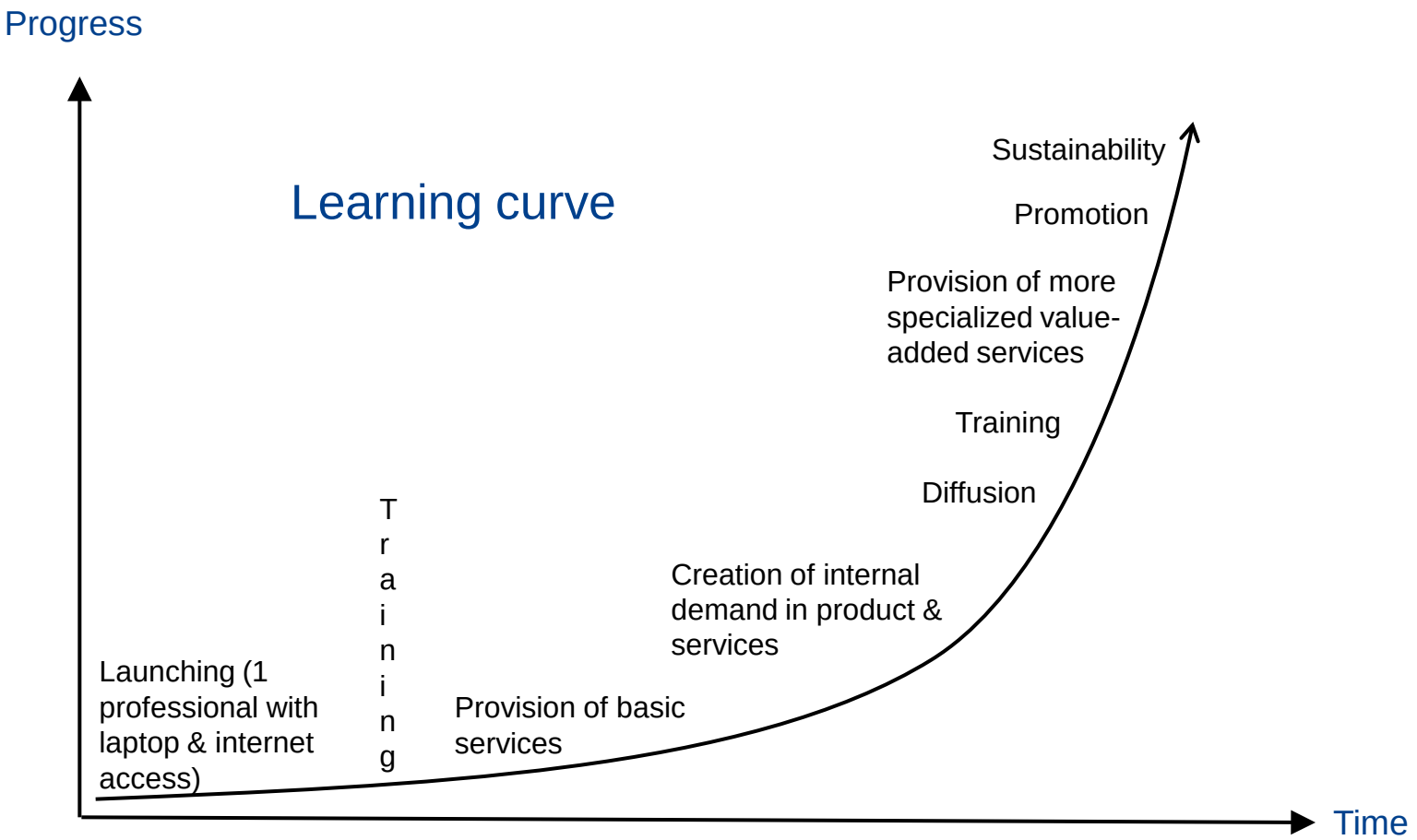


TISC Services

- Core services
  - Access to patent and non-patent databases
  - Assistance in using databases
- Additional services (based on user need and office capacity)
  - Technology search services
  - Patent analytical services
  - Awareness-raising and training services

Photo source: Office Marocain de la Propriété Industrielle et Commerciale

TISC Development



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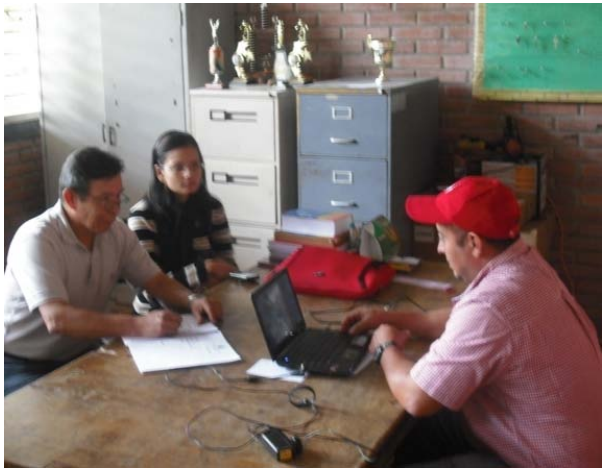
WIPO activities



- Capacity building
- Networking
- Resources

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Capacity building

- On-site training (including training of trainers)
- WIPO Academy Distance learning courses (DLCs)
- Webinars

→ Since 2009: Over 6000 participants trained on-site

→ Since 2011: Over 3000 participants registered through national TISCs for WIPO Academy DLCs

Capacity building: On-site training

- Training in effective use of patent and non-patent search services and tools
  - Database and search fundamentals
  - Free-of-charge databases: PATENTSCOPE, etc.
  - Different types of patent searches
  - Patent analytics

Distance learning

- DL-101: General course on intellectual property
- DL-301: Patents
- DL-318: Patent information search
- …and many others

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Webinars

- Fundamentals of Using Patent Databases
- Patent Classification: Structure and Use
- Patent Classification: Advantages
- WIPO Standards
- Research4Life and ARDI Programs
- Business Use of Patent Information
- eTISC Platform Functionalities

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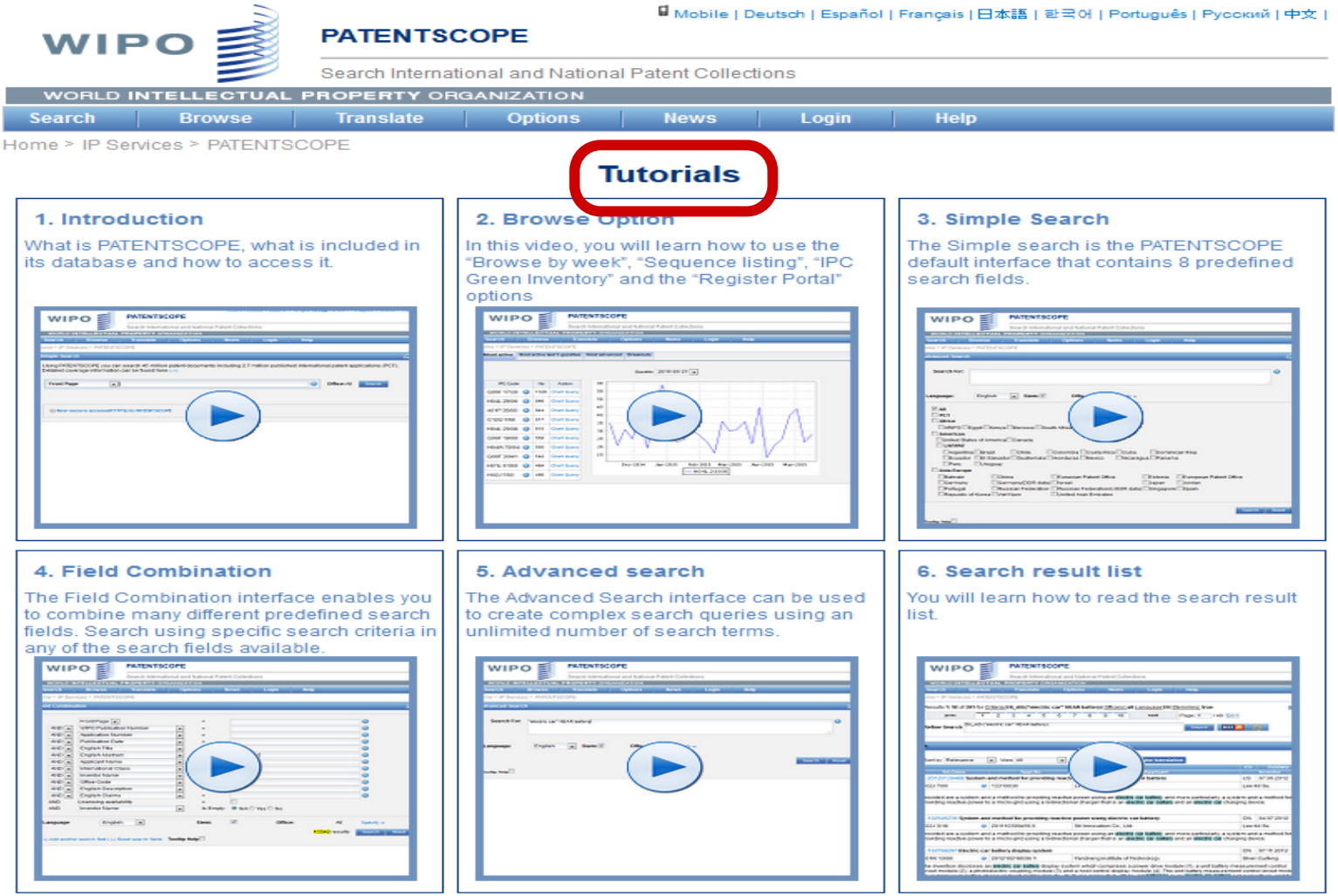
PATENTSCOPE: Video Tutorials



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Networking

- National networks
- Regional cooperation
- eTISC

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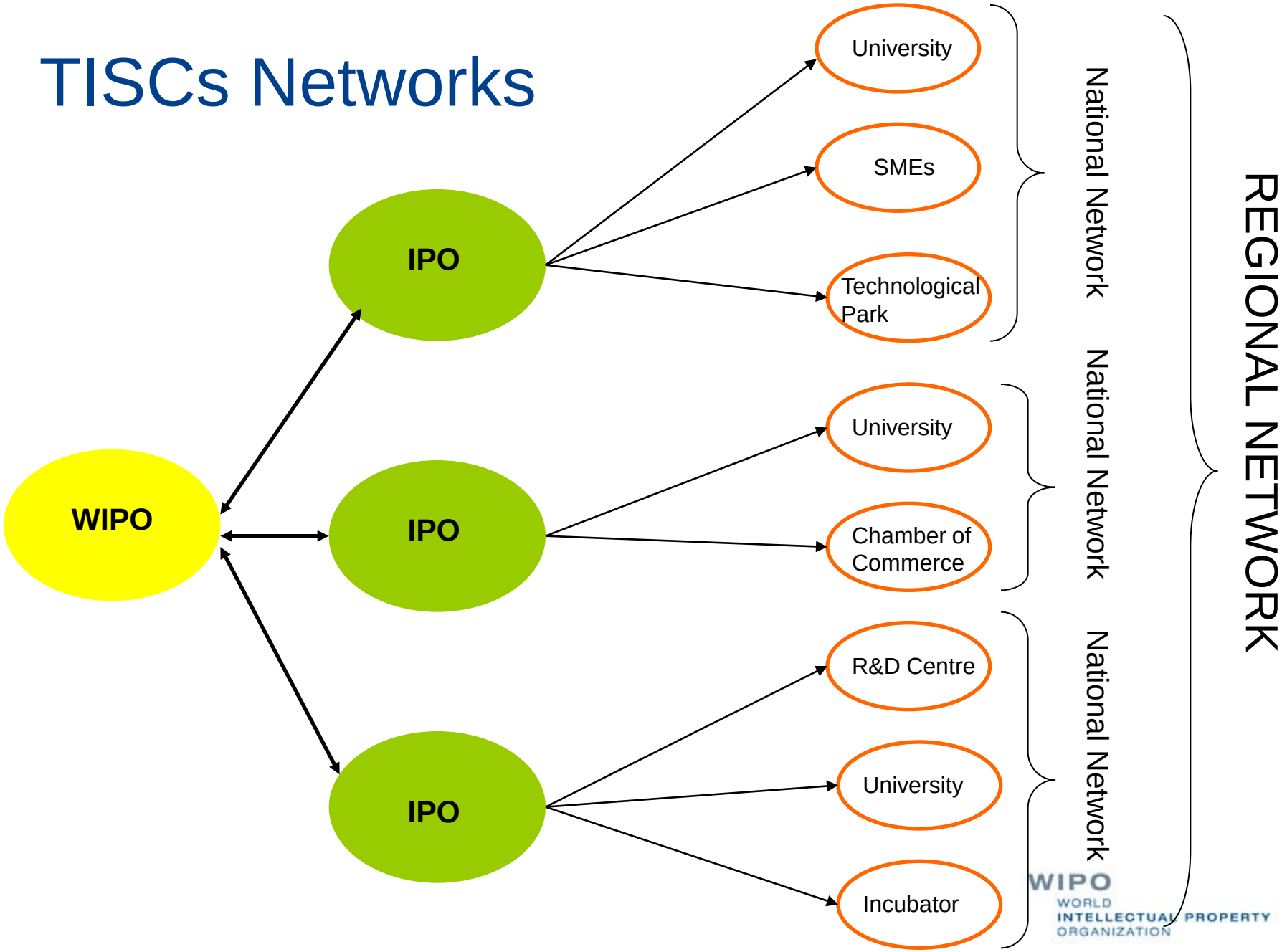
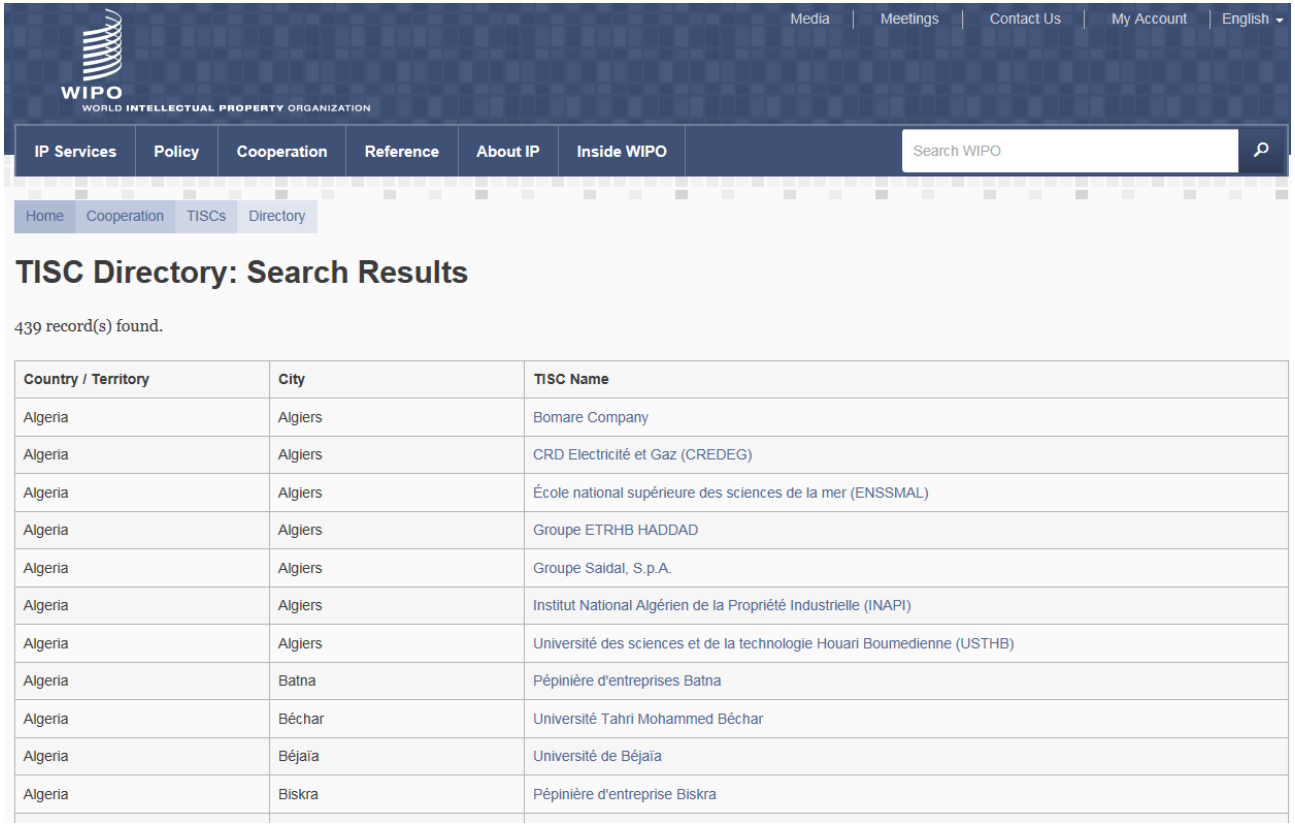
TISCs Networks



TISC Directory



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TISC Directory: Search Results

439 record(s) found.

Country / Territory	City	TISC Name
Algeria	Algiers	Bomare Company
Algeria	Algiers	CRD Electricité et Gaz (CREDEG)
Algeria	Algiers	École national supérieure des sciences de la mer (ENSSMAL)
Algeria	Algiers	Groupe ETRHB HADDAD
Algeria	Algiers	Groupe Saidal, S.p.A.
Algeria	Algiers	Institut National Algérien de la Propriété Industrielle (INAPI)
Algeria	Algiers	Université des sciences et de la technologie Houari Boumedienne (USTHB)
Algeria	Batna	Pépinière d'entreprises Batna
Algeria	Béchar	Université Tahri Mohammed Béchar
Algeria	Béjaïa	Université de Béjaïa
Algeria	Biskra	Pépinière d'entreprise Biskra

- Contacts
- Services
- Technology specialization
- Languages

→ Searchable

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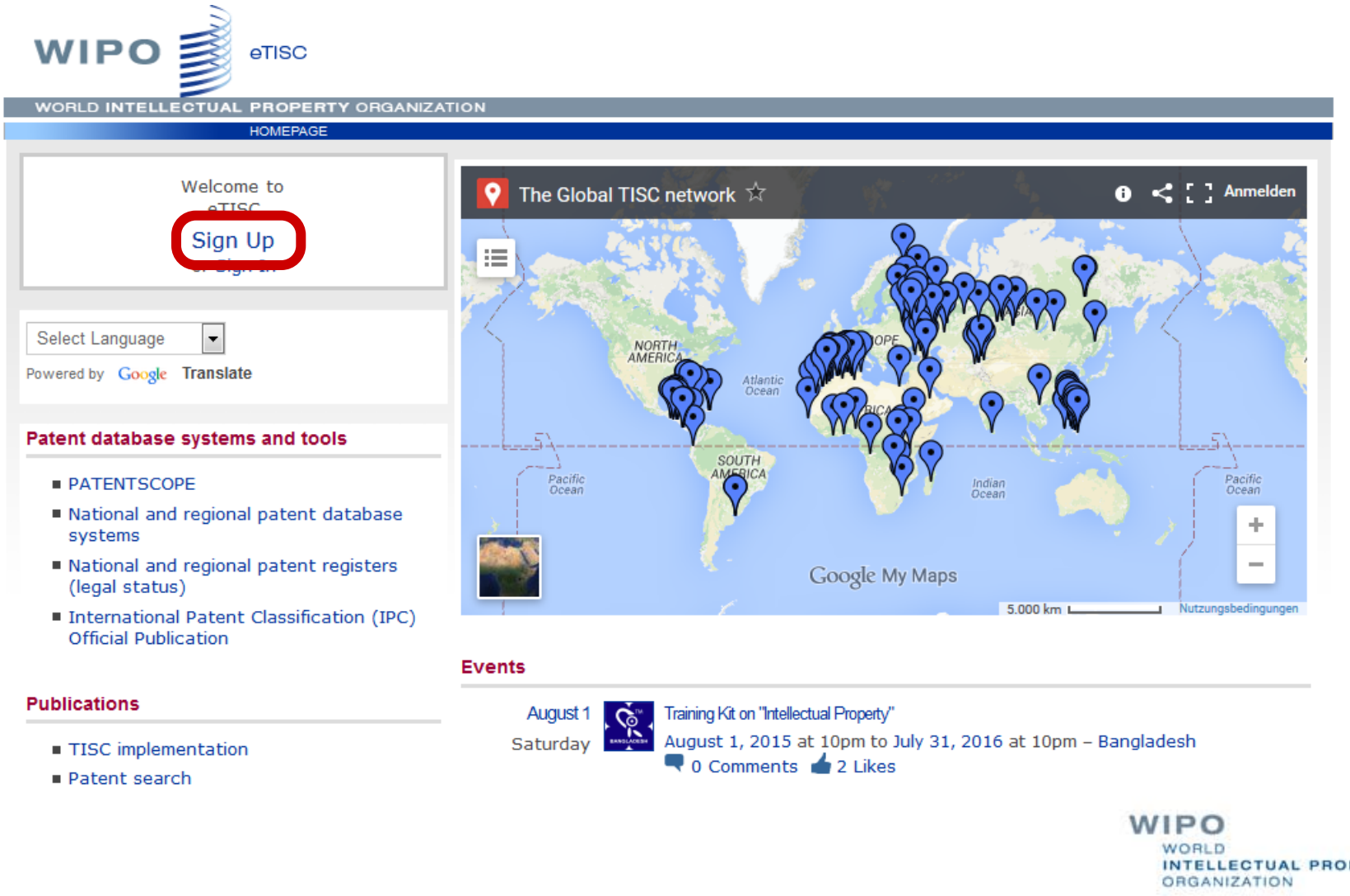
eTISC Frontpage - http://etisc.wipo.org



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eTISC

- Directory
- Helpdesk (WIPO)
- Forums and groups
- News
- Events
- Webinars
- Special features (“Ask the Expert”, articles)

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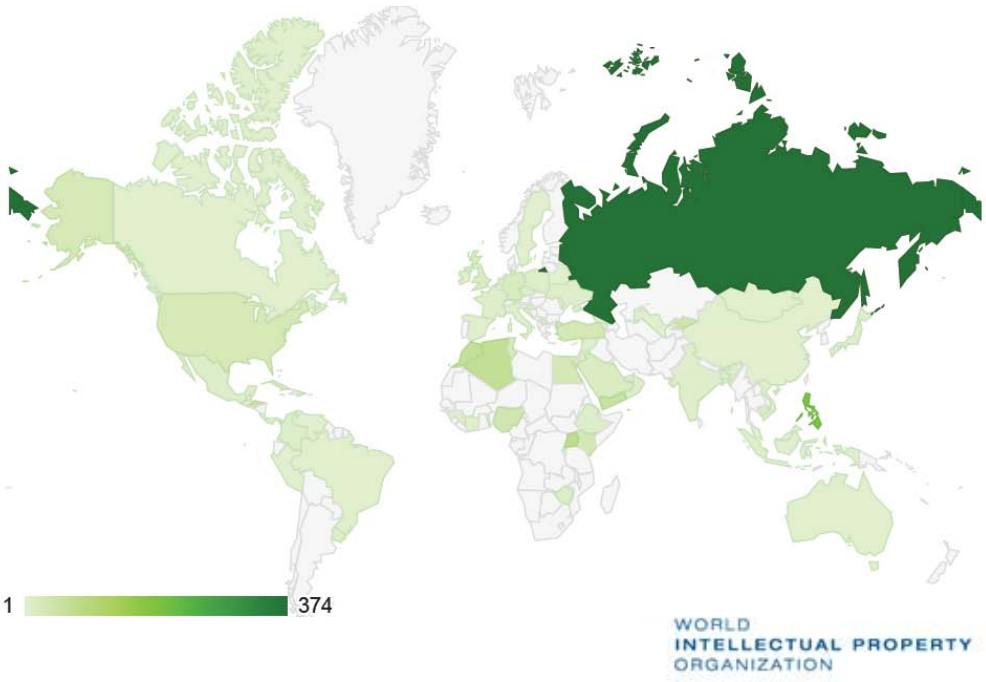
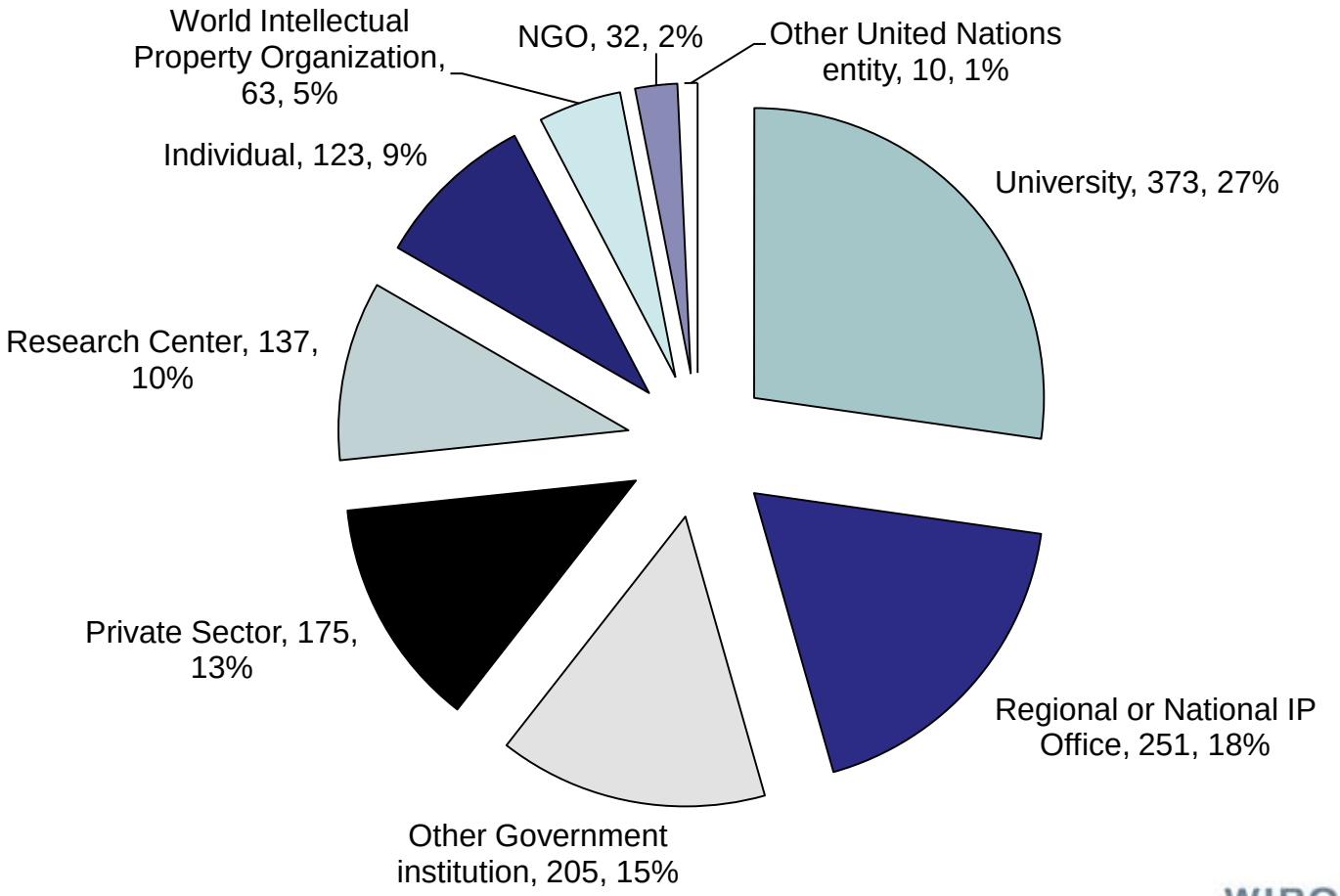
Main Figures (as of February 2016)

~1550 users

>90 countries



eTISC: Institution type



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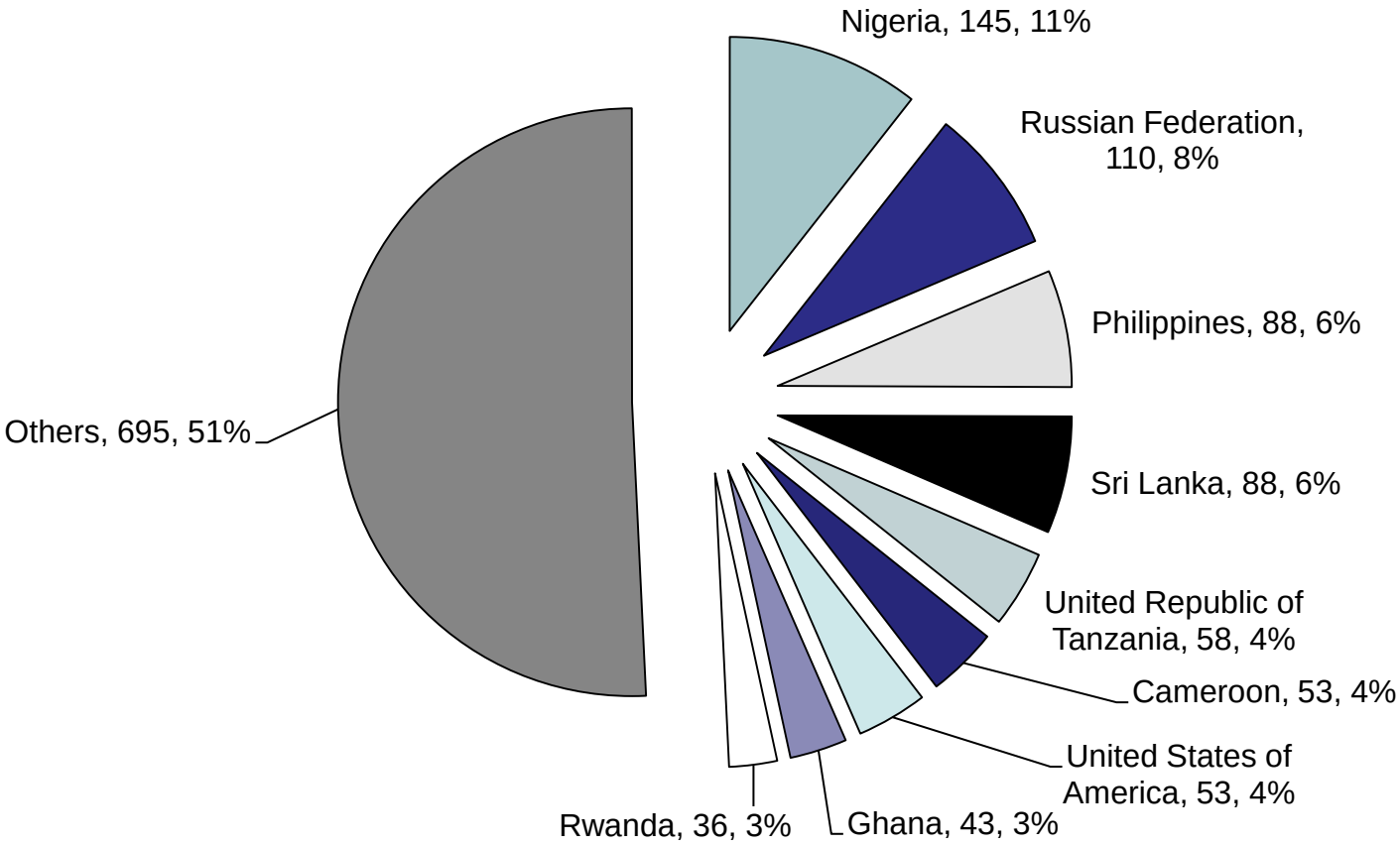
eTISC: Country



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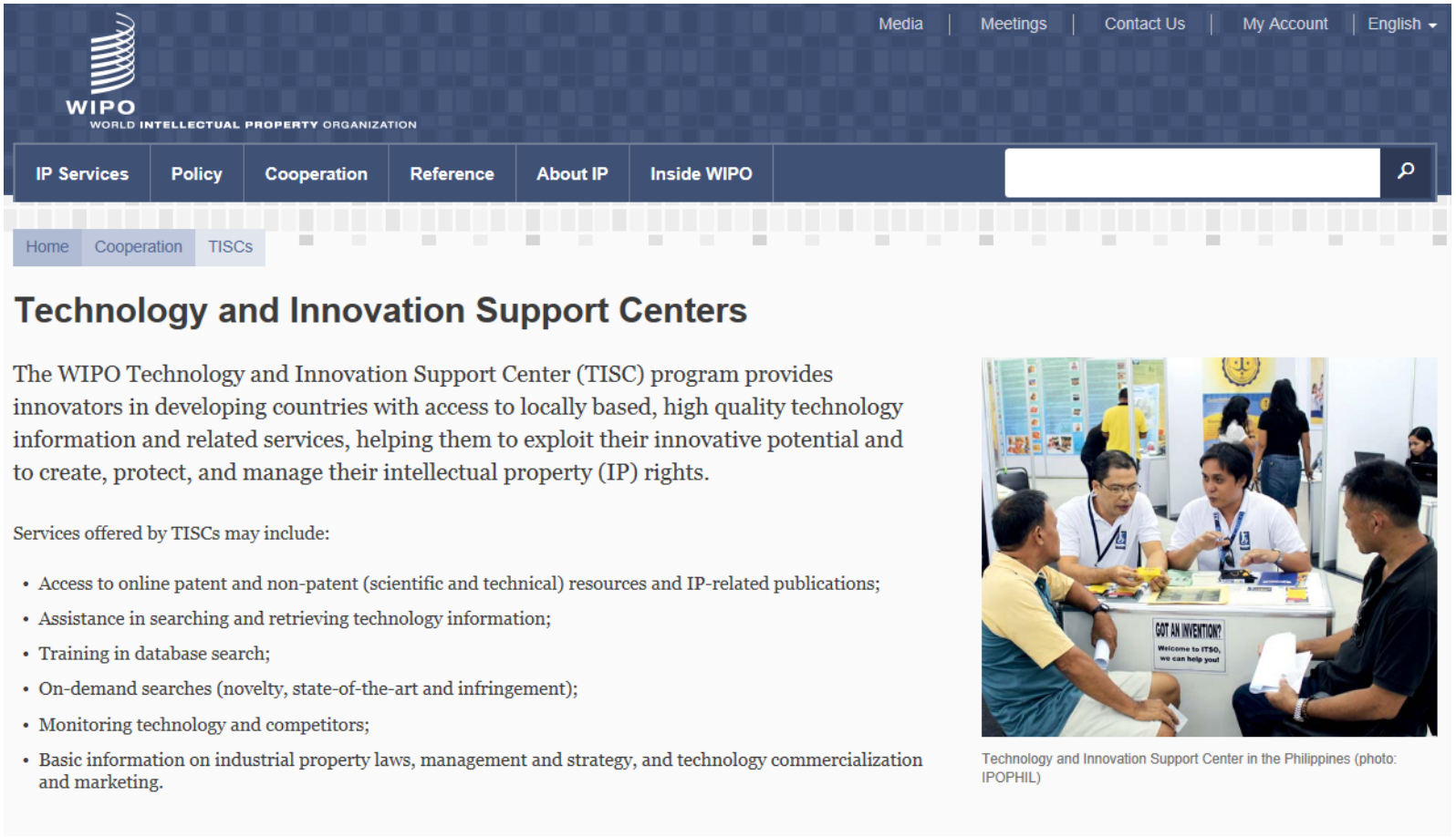
Resources



- TISC website http://www.wipo.int/tisc

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Publications

- TISC Implementation Guide
- TISC brochure
- TISC posters
- Finding Technology Using Patents
- Guide to Patent Information
- Guide to Technology Databases
- PATENTSCOPE Search and CLIR
- PATENTSCOPE Search: The User's Guide

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e-Tutorial

- Patent Basics
- Patent Search and Retrieval
- Patent Analysis

- Tutorials
- Scenarios

- English
- French
- Spanish

Patent Landscape Reports (PLRs)

- Innovation patterns
- Technical, legal and business information
- Patent search methodology
- Different databases and analyzing tools
- Patenting trends

→ Specific technological field/geographical area

WIPO website

Media | Meetings | Contact Us | My Account | English

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IP Services | Policy | Cooperation | Reference | About IP | Inside WIPO | Search WIPO

Home | Reference | PATENTSCOPE | Patent Landscapes

Patent Landscape Reports

On this page: WIPO patent landscape reports (PLRs) | PLR Guidelines | Other PLRs

Patent landscape reports (PLRs) provide a snap-shot of the patent situation of a specific technology, either within a given country or region, or globally. They can inform policy discussions, strategic research planning or technology transfer. They may also be used to analyze the validity of patents based on data about their legal status.

A PLR begins with a state-of-the-art search for the relevant technology in selected patent databases. The search results are then analyzed to answer specific questions about, for example, patterns of patenting activity or of innovation. The results are presented visually to assist understanding and conclusions or recommendations based on the empirical evidence are provided.

Contact us

FEATURED PUBLICATION

Guidelines for Preparing Patent Landscape Reports

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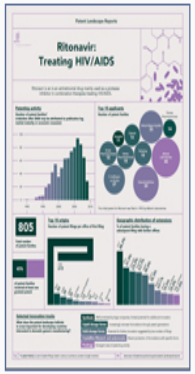
WIPO PLRs

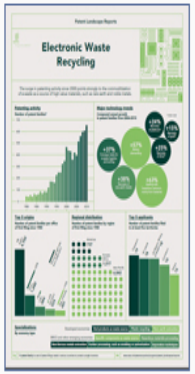
WIPO's patent landscape reports

All reports

Under the Development Agenda project "Developing Tools for Access to Patent Information" WIPO is mandated to produce patent landscape reports in areas of particular interest to developing and least developed countries, such as public health, food security, climate change, and the environment.

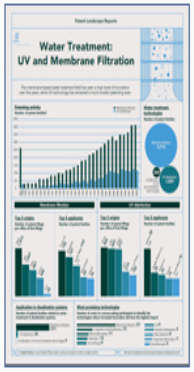


Ritonavir - Treating HIV/AIDS



Electronic Waste Recycling

Animal Genetic Resources



Membrane Filtration & UV Water Treatment

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PLRs: Themes

- Public Health
- Food and Agriculture
- Environment and Climate Change
- Disabilities

PLRs by other organizations

Patent Landscape Reports by Other Organizations

On this page: Public health/life sciences | Climate change/energy | Food & agriculture | Other areas of technology | Larger patent landscape collections, technology bulletins & other relevant links

The following patent landscape reports - published by international organizations, national intellectual property offices, non-governmental organizations and private sector entities - are freely available or can be obtained upon request, either free of charge or for a fee.

This list, compiled by WIPO, is not exhaustive and we are continuing to extend it. Contact us with any recommendations you have for other reports to be included.

Shortcuts

WIPO's patent landscape reports

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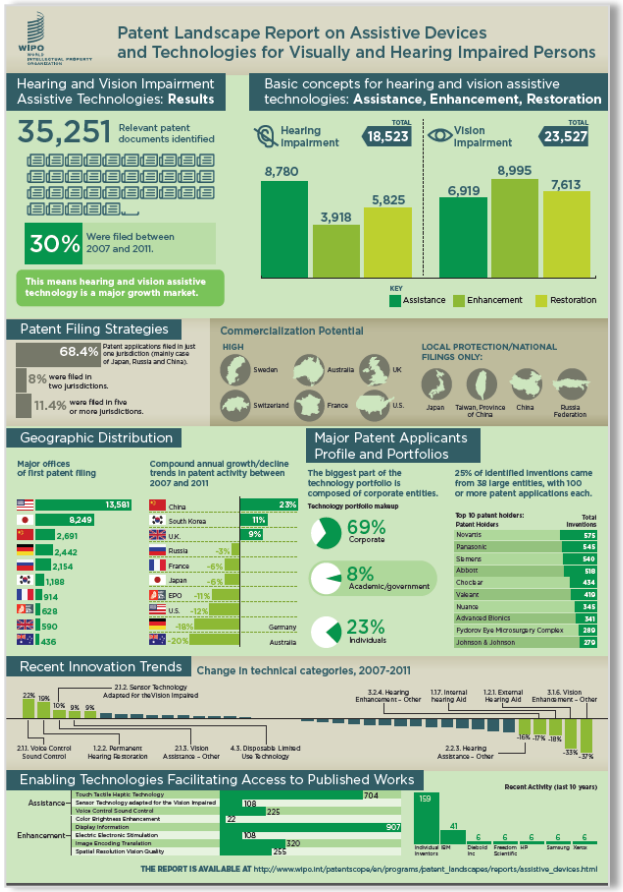
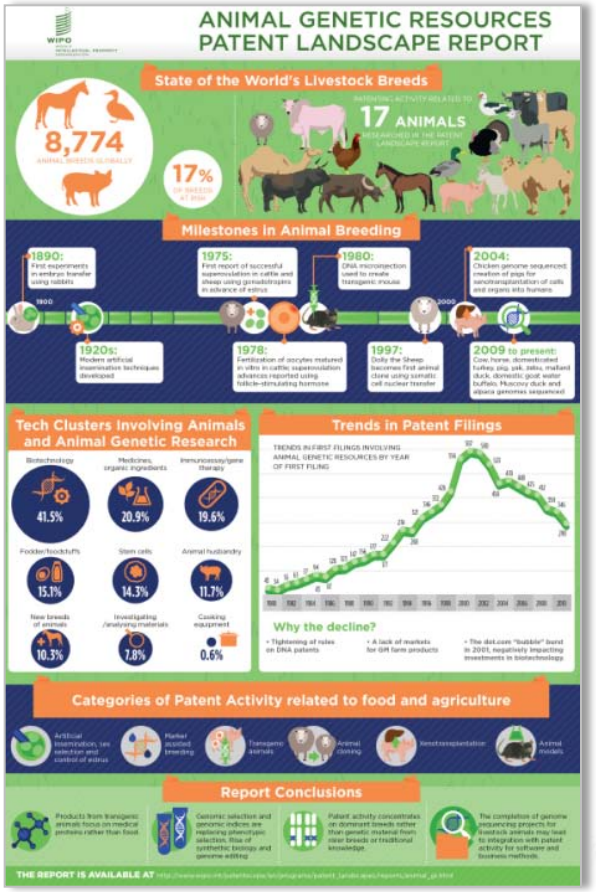
PLRs: Infographics

- Effective means of disseminating the patent analysis





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Example:

- Electronic waste recycling

E-Waste Recycling Technologies (PLR)

- Recoverable materials
- E-waste resources and processing
- Processes and logistics

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Technology clusters

- Batteries
- Processing
- Printed circuit boards
- Material recovery

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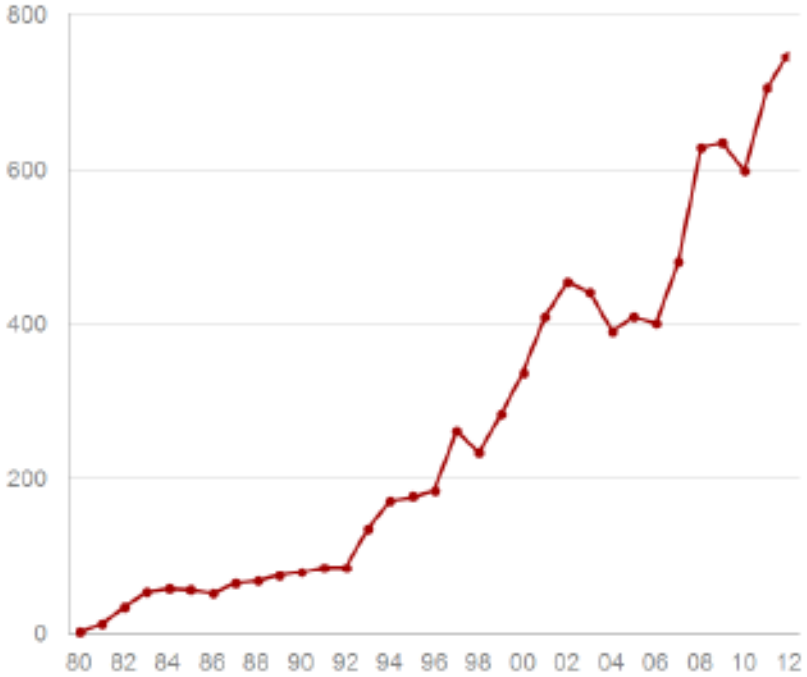
Patenting activity



Number of patent families over time

- Nearly 9000 related patent families
- 30% of the patenting activity: last 5 years

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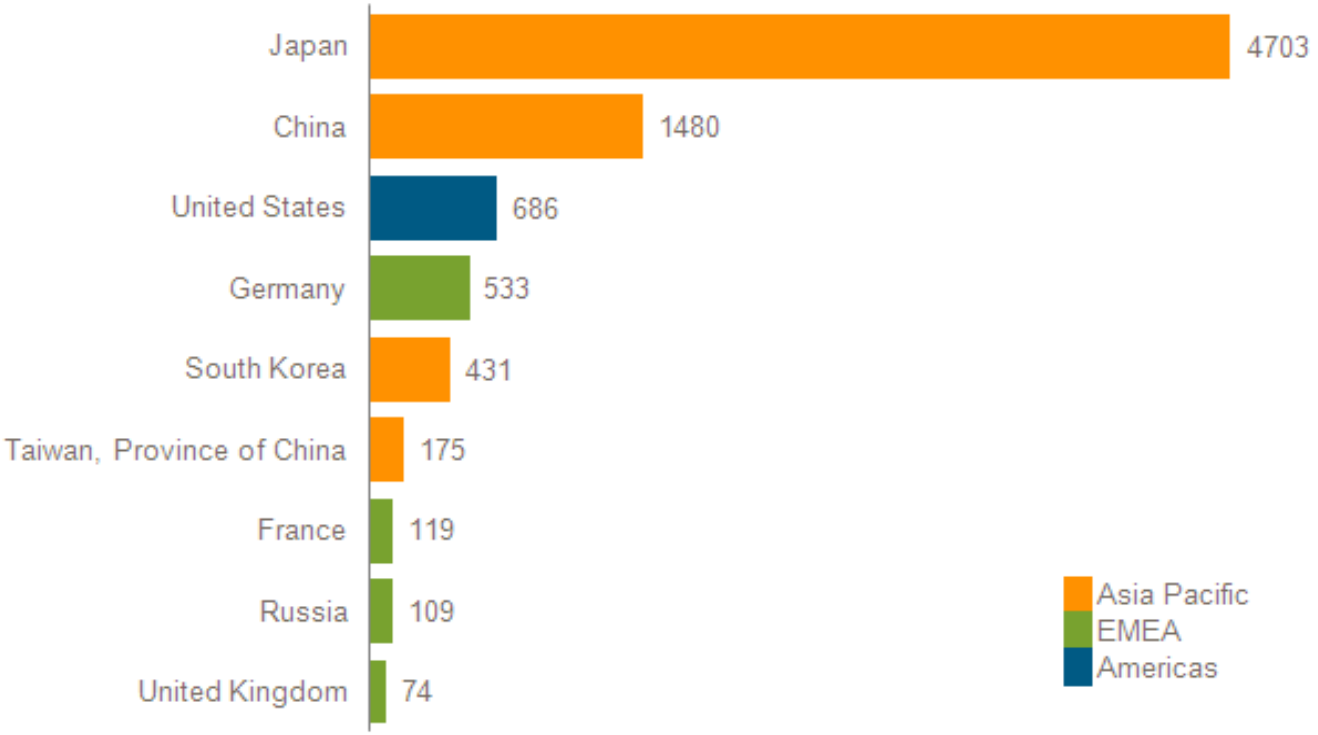
Major filing offices



Patent families per major office of first filing since 1980

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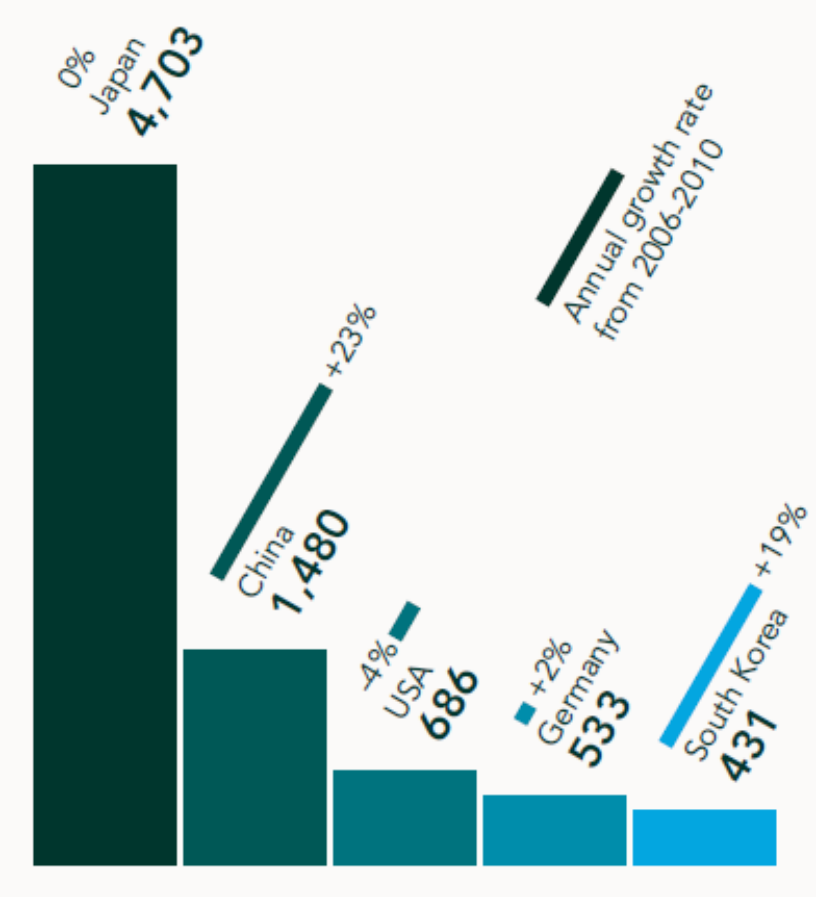
Top five offices



- Growth rate from 2006 to 2010
- Emergence of China and South Korea
- Plateau for Japan

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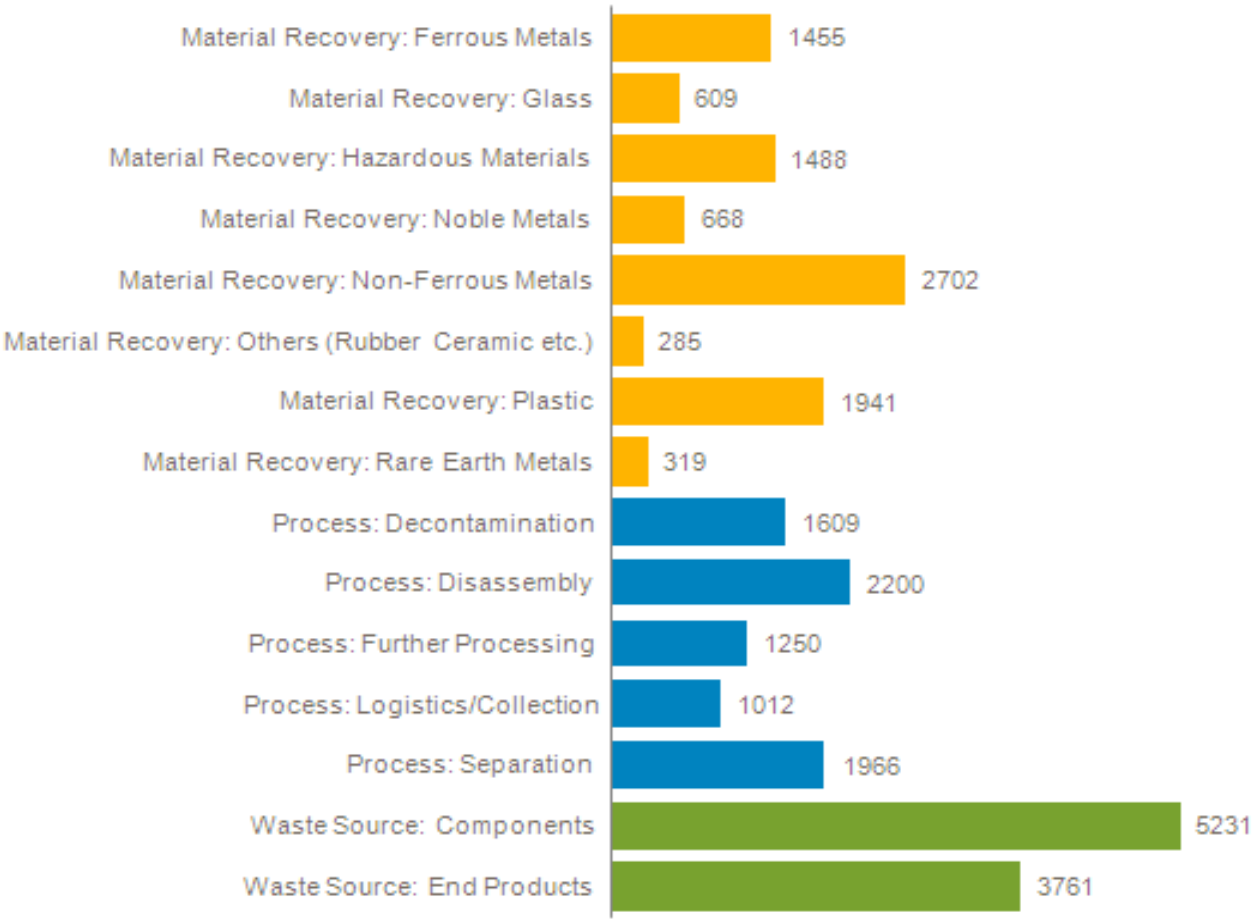
Major technology areas



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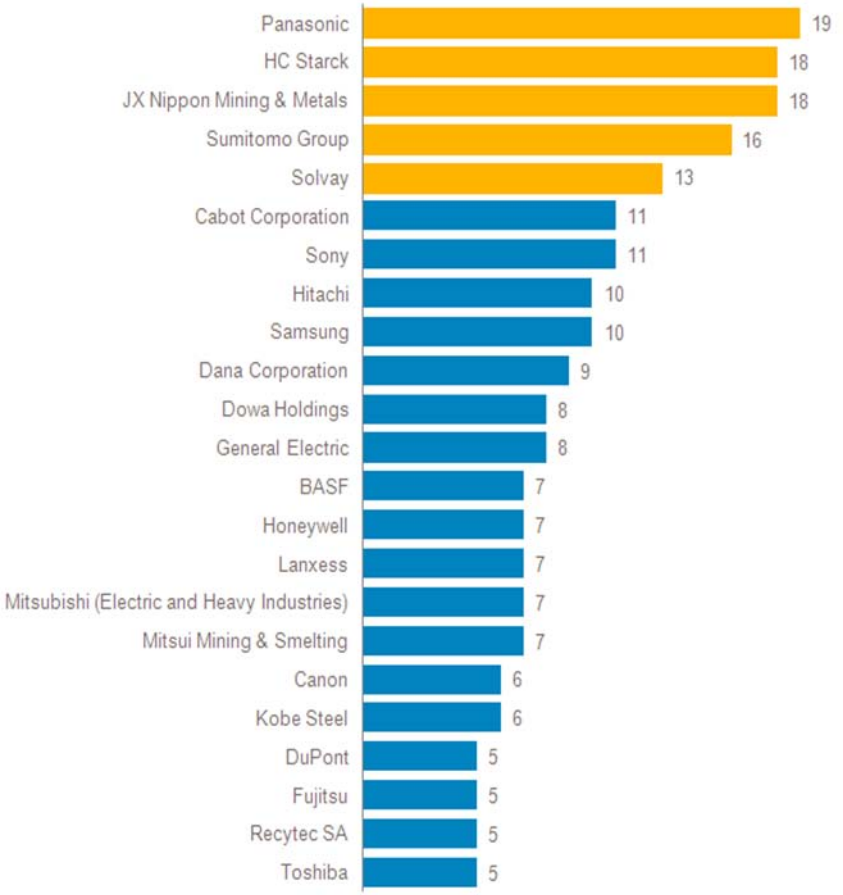
Key players

- Top applicants with filings at least 5 jurisdictions



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Tools for patent analytics

- Guidelines on Drafting Patent Landscape Reports (PLRs)
  - Tasks and stages associated with the preparation of PLRs
- Manual on free and open source tools used for patent analysis
  - How to obtain data for patent analytics
  - Clean, analyze, visualize and share the data

WIPO-WEF Inventor Assistance Program (IAP)

- Legal assistance in filing and prosecution of patent applications

- Under-resourced inventors and small enterprises

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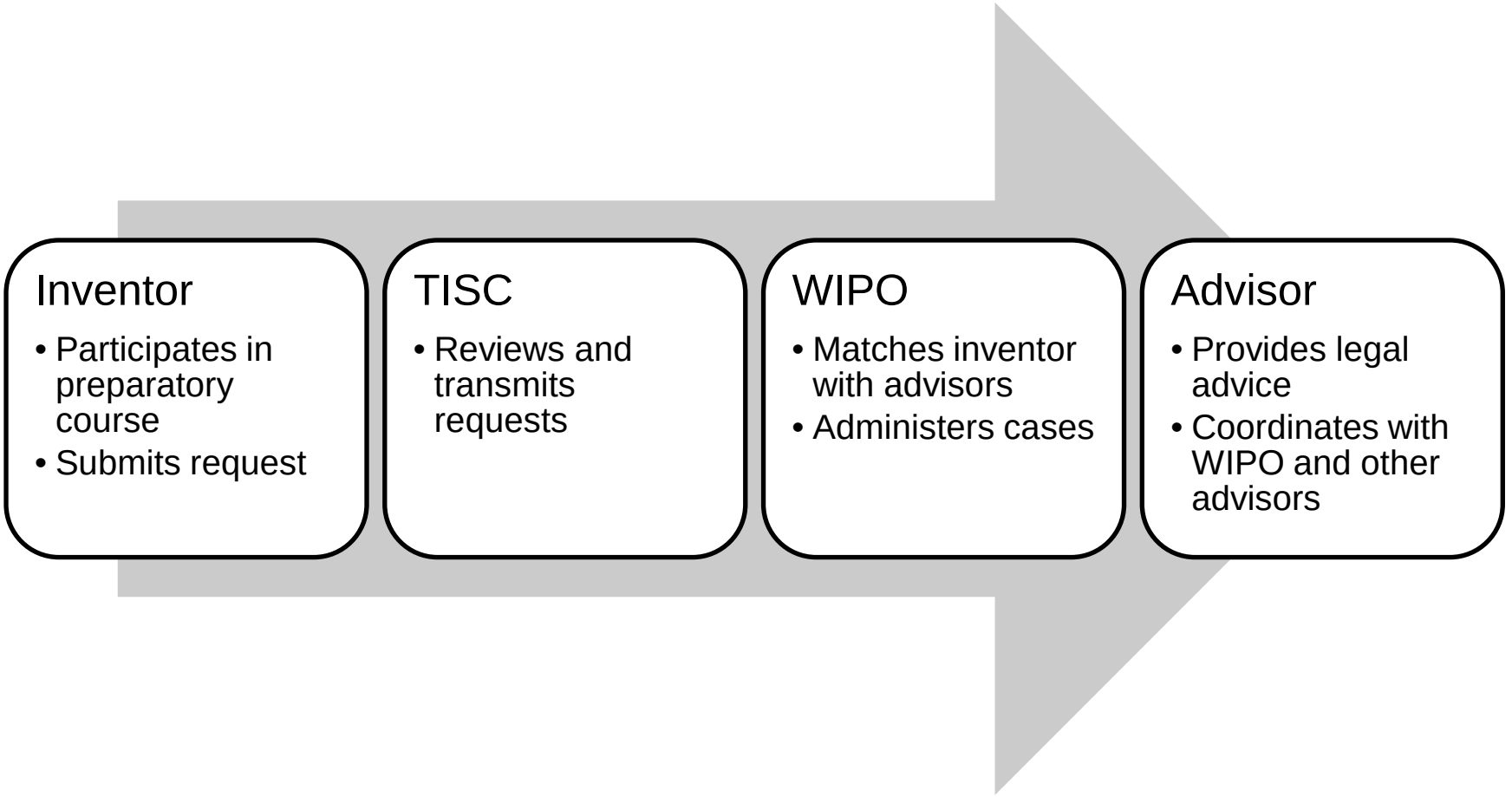
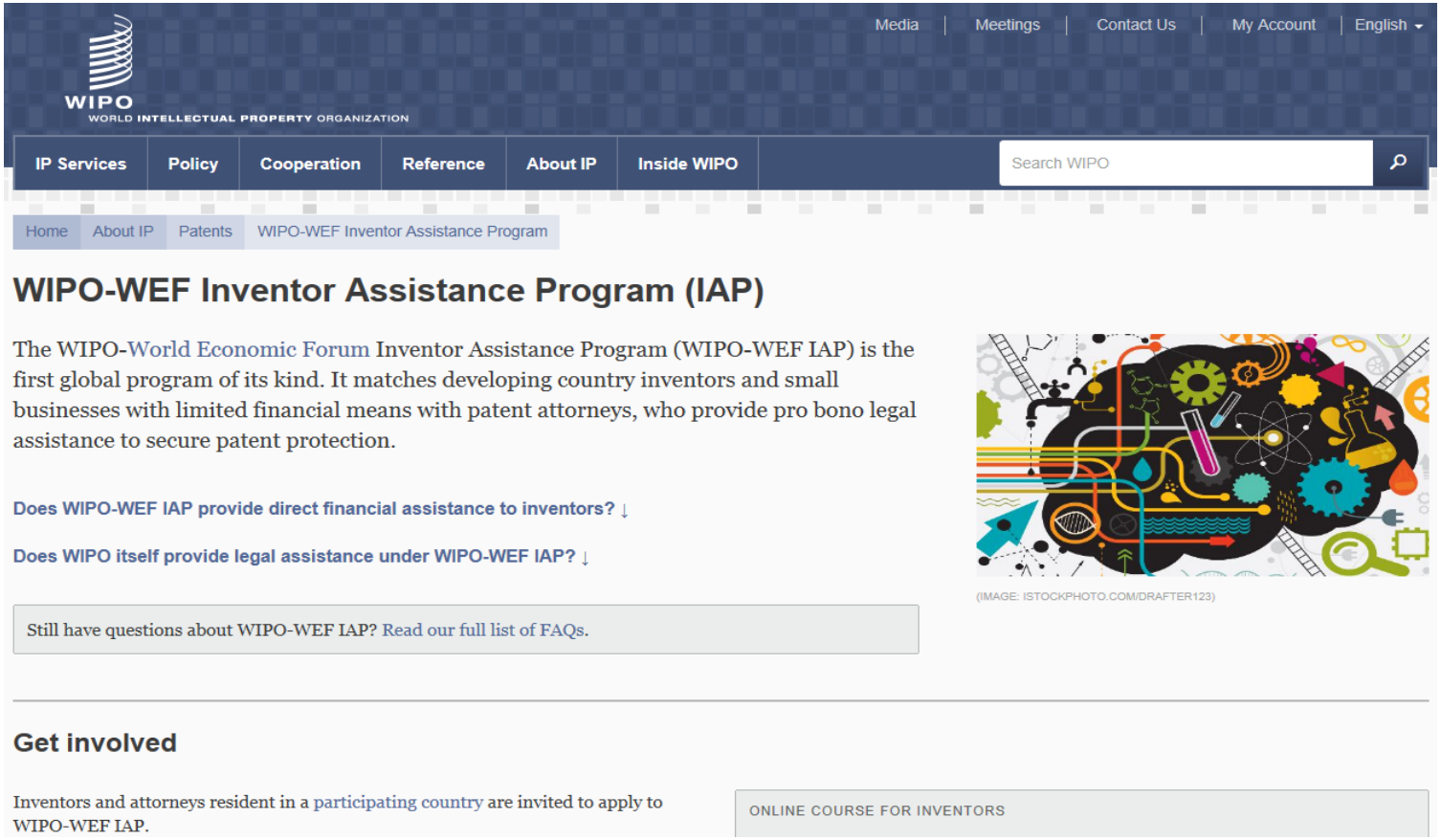
Process


Inventor
• Participates in preparatory course
• Submits request
TISC
• Reviews and transmits requests
WIPO
• Matches inventor with advisors
• Administers cases
Advisor
• Provides legal advice
• Coordinates with WIPO and other advisors

WIPO-WEF Inventor Assistance Program



Pilot countries: Colombia, Morocco and the Philippines

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Electronic resources: Access to patent database systems

ASPI

ACCESS TO SPECIALIZED PATENT INFORMATION

- Partnership with 5 patent database service providers
  - LexisNexis → TotalPatent
  - Minesoft → PatBase
  - Questel → Orbit
  - Thomson Reuters → Thomson Innovation
  - WIPS → WIPS Global
- Free or low-cost access for 122 developing and least developed countries to advanced patent search and analysis tools

www.wipo.int/aspi

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Electronic resources: Access to scientific and technical content

ARDI
Research for Innovation

- Partnership with 17 major publishers
- Free or low-cost access for 116 least developed and developing countries to over 20'000 books, journals, and reference works in various fields of research including:
  - applied physics
  - engineering
  - chemistry
  - traditional knowledge

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ARDI: Research4Life Programs

ARDI
Research for Innovation

HINARI
Research in Health

AGORA
Research in Agriculture

OARE
Research in the Environment

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World Health Organization

Food and Agriculture Organization of the United Nations

UNEP
United Nations Environment Programme

www.research4life.org

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